

WILDLAND SMOKE MANAGEMENT PROGRAM SURVEY

WESTERN GOVERNORS' ASSOCIATION
CONTRACT NO. 30202-11

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Introduction

On June 10, 1996, the Grand Canyon Visibility Transport Commission (GCVTC) submitted its report, *Recommendations for Improving Western Vistas*, to the U. S. Environmental Protection Agency (EPA). Recognizing that smoke from wildfire and managed burn activities can have a significant impact on visibility and regional haze, public health and public nuisance, the GCVTC recommended that eight specific fire-related measures be developed to address the potential effects of fire on air quality. The development and implementation of criteria and requirements for the use of enhanced smoke management programs is one of the recommended measures.

Fire is an integral force in the evolution of many wildland ecosystems. Land managers use managed wildland or prescribed fires to duplicate the effects of natural fires under controlled conditions. Smoke management programs (SMP) provide a basic framework of procedures and requirements for managing smoke from prescribed fires. The purposes of the SMPs are to mitigate the nuisance and public safety hazards (e.g., on roadways and at airports) posed by smoke intrusions into populated areas; to prevent deterioration of air quality and violations of the National Ambient Air Quality Standards; and to address visibility impacts in mandatory Class I Federal areas. Many States and local areas have prescribed fire regulations and SMPs in place.

The Fire Emissions Joint Forum (FEJF) is a group formed under the auspices of the Western Regional Air Partnership (WRAP), which was established to implement the recommendations of the GCVTC. The FEJF's mission is to develop programs and tools relating to prescribed fire and air quality for the WRAP and related WRAP forums. One of these tools is recommendations for elements of basic SMPs for wildlands. To develop guidance for the basic SMP, the FEJF needed additional information from State and local agencies regarding their existing SMPs and regulations.

To gather additional information, the FEJF prepared a list of 30 questions under seven broad subject headings: burn authorization, minimizing emissions, smoke management, public education, surveillance and enforcement, program evaluation, and air quality protection. Nineteen States and 16 local agencies were contacted and interviewed, and asked to provide documents and any other information regarding their SMPs. After carefully reviewing all the gathered information, draft surveys were prepared that answered the 30 questions. Each State and local area was sent the draft survey and cover letter requesting their review and comment. The comments were then incorporated into the surveys and compiled into this report. Figure 1 illustrates the 19 States and 16 local areas that are summarized.

This report illustrates the various ways in which States and local areas address smoke management through regulations and programs. Each surveyed program is unique and reflects climate, geography, vegetation type, burn objectives, and other constraints such as air quality and funding. In addition, many of the surveyed programs are evolving to fulfill certain requirements such as the Regional Haze Rule and Title 17 in California. This report will assist the FEJF with establishment of a SMP clearinghouse and elements of basic SMPs for wildland fire as envisioned by the GCVTC.

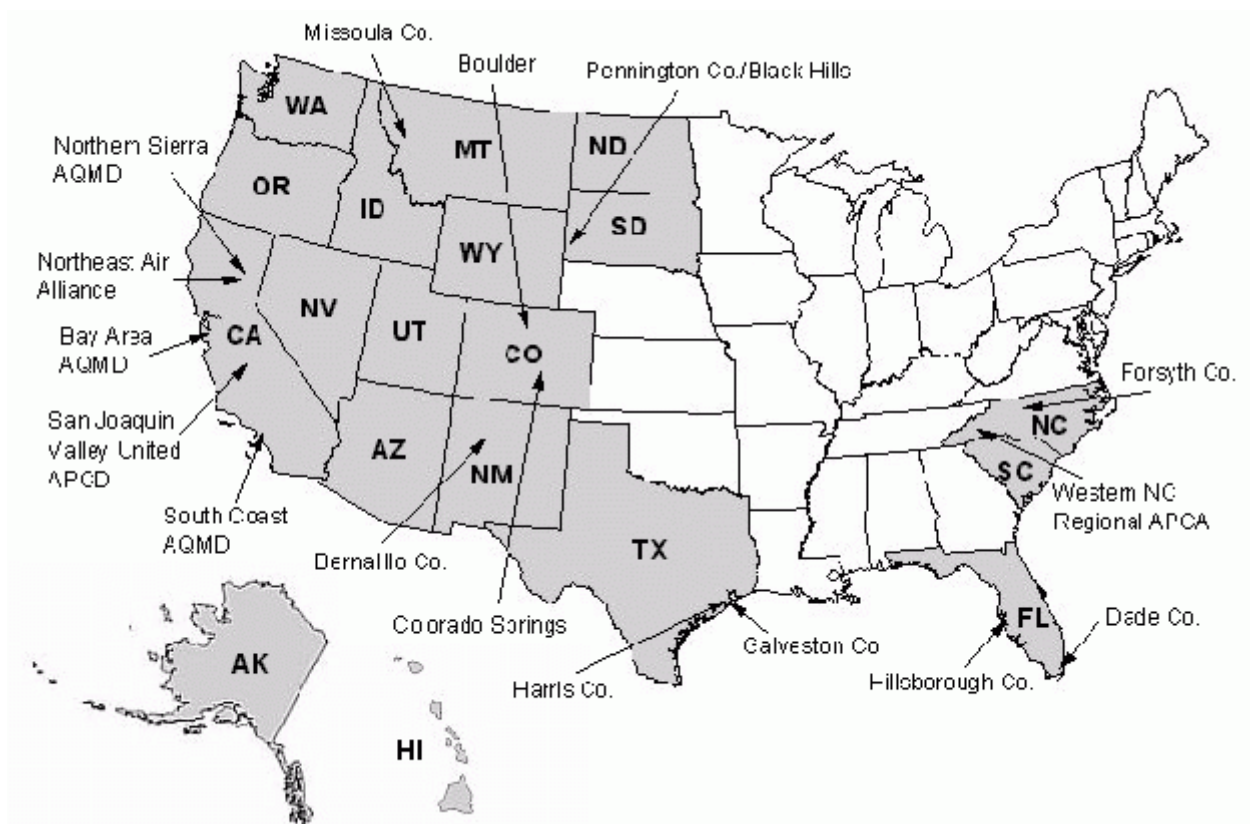


Figure 1. The 19 States and 16 Local Areas Summarized.

Source of summary information:

- [1] Alaska Department of Environmental Conservation, Open Burning Policy & Guidelines at <http://www.state.ak.us/dec/dawq/aqi/openburn.htm>
- [2] Comments received from the Alaska Department of Environmental Conservation dated July 18, 2000.

Special Note:

- This survey was reviewed by the AK Department of Environmental Conservation. For more information, contact Ann Lawton, AK DEC, 555 Cordova St., Anchorage, AK, 99501.

Smoke Management Program Component	State
	Alaska
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Alaska Department of Environmental Conservation (DEC) is responsible for regulations and permits to address environmental protection. It is the policy of the DEC to eliminate, minimize, or control open burning. [1]• The DEC does not try to eliminate controlled burning as much as coordinate it, so that no one airshed is overloaded. Eliminating burning would not be feasible for 99% of the land management projects in Alaska. [2]• The Alaska Department of Natural Resources (DNR) is responsible for regulations and permits to address fire safety concerns. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none">• DEC does not coordinate with Canada, our only neighbor, primarily because very little smoke passes their borders into populated areas. [2]• Regional coordination within the state occurs through the monthly meetings of the Alaska Wildland Fire Coordinating Group (AWFCG), comprised of representatives of all agencies that use fire as a management tool (BIA, NPS, US FWS, Chugachmiut, BLM/AFS, DNR F&G, DNR Forestry, USDA FS). DEC is an <i>ad hoc</i> member, and does not have voting privileges. However, there is an <i>ad hoc</i> Air Quality Committee of the AWFCG that is a forum to discuss air quality issues, but it hasn't met in over two years. [2]• Coordination primarily occurs between DEC and each land manager on a case-by-case basis, or through AWFCG. We also collaborate on press releases, public education, and other issues during wildfire events or prior to large controlled burns. [2]

Smoke Management Program Component	State
	Alaska
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Alaska does not have a smoke management program. • We don't have a SMP written, but we do have an unwritten smoke management program. The program consists of mandatory adherence to state regulations governing nuisance smoke, NAAQS, and operating with an approval from the state. A written approval requires public notification, minimization of smoldering, and weather coordination for optimum conditions. [2] • The state recognizes the need to develop an Alaska SMP to control open burning and, due to interagency concerns over such a document, the Air Quality Committee of the Alaska Wildland Fire Coordinating Group will be developing the document. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • Open burning within the state is addressed by the DEC regulations, policies and guidelines. [2]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Controlled (prescribed) burning to manage forest, land, vegetative cover, fisheries, or wildlife habitat, other than burning to combat a natural wildfire, requires written DEC approval if the area to be burned exceeds 40 acres yearly. [1] • For land clearing, notification of at least one day in advance of burning attempts should be provided to the DEC. If burning is not conducted for that day, remodification is required on the day burning commences. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Written permission requires that the burn follow specific state regulations. Permission is denied if the burn will not adhere to regulations, including following prevailing wind vectors. Approvals are revoked and enforcement is pursued for burns in deliberate violation of regulations or submitted burn plans. [2]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • No operating agreements are in effect. [2] • No special requirements are specified by DEC for burner qualifications, except that any prior burning must have been done in accordance with state regulations. [2] • No smoke management training is available within the state for any agencies. [2]

Smoke Management Program Component	State
	Alaska
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • It is the policy of the DEC to encourage other methods of disposal where possible. [1] • The DEC supports the maximum recycling and utilization of wood and forest products to reduce the volume of material requiring burning. [1] • No incentives are given for using alternatives, although some sensitive areas require “creative” measures to ensure that NAAQS are not exceeded. [2] • Emissions in general are not tracked. Alaska does not have any applicable fuels data for emission calculations. [2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • When open burning is permitted by the DEC, the permittee must provide for the most efficient combustion possible for the material to be burned. [1] • A person may not cause or permit any emission that is injurious to human health or welfare, animal or plant life, or property, or that would unreasonably interfere with the enjoyment of life or property. [1] • Except for controlled burning or firefighting, a person conducting open burning must ensure that: 1) the material is dried or kept covered to the greatest extent possible prior to burning; 2) before igniting the burn, noncombustibles are separated; 3) natural or artificially induced draft is present; 4) to the greatest extent practicable, combustibles are separated from grass or peat layer; and 5) combustibles are not allowed to smolder. • Open burning in a way that gives off toxic or acidic gases or particulate matter is prohibited. [1] • Open burning is prohibited in an area if the DEC declares an air quality advisory (due to inadequate air ventilation) stating that burning is not permitted in that area for the day. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Documentation of actions taken is important if smoke in populated areas becomes an issue. We do not correlate emission reduction techniques with emission data (because we don’t have any). [2]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Each prescribed burning applicant will have an operational plan of action documenting the weather conditions under which the use of prescribed fire will be authorized, and contingency actions to follow if prescriptive conditions are exceeded. Plans for burning that may impact sensitive areas, such as population centers or airports, will require more specific detail than plans for remote areas. [1] • A complete burn plan is required for land clearing open burns planned for each year. [1]

Continued on next page

Smoke Management Program Component	State
	Alaska
11. <i>Continued</i>	<ul style="list-style-type: none"> • Burn plans must address the following control concerns which may be modified to fit the specific open burning situation: 1) the location, duration, and inclusive dates for the burn(s); 2) the location of all sensitive features that might be impacted by smoke; 3) where weather forecasts will be obtained and how it will be used to prevent smoke impacts; 4) how weather changes will be monitored and what will be done to reduce or mitigate smoke impacts if unfavorable weather occurs after ignition; 5) considerations for visibility impacts; 6) how coordination with air quality authorities having jurisdiction will be accomplished; 7) procedures that will be used to coordinate with other concerned agencies; 8) how the public will be informed prior to, during, and after the burn; 9) actions to enhance the active fire phase and reduce the smoldering phase; 10) actions to validate predicted smoke dispersal conditions; 11) alternative disposal options for material being open burned. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • For land clearing, the applicant may be required to obtain meteorological information for the burn day, specifically wind speed, wind direction, and ceiling level, both for the start of the burn and forecasted for the duration of the burn. If the wind direction would allow smoke to impact on sensitive areas, burning may be denied for that period. [1] • Except for firefighter training, open burning of materials in a way that gives off black smoke is prohibited without written DEC approval. The person who conducts open burning must establish reasonable procedures to minimize adverse environmental effects and limit the amount of smoke generated. [1] • Open burning is prohibited between November 1 and March 31 in a wood smoke control area. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • All approved fires require public notice unless it is waived in writing due to burn area remoteness. [2] • A person required to provide public notice of open burning must issue the notice through the local news media or by other appropriate means if the area of the open burning does not have local news media. The public notice must be issued as directed by the DEC and must: state the name of the person conducting the burn; provide a list of material to be burned; provide a telephone number to contact the person conducting the burn before and during the burn; and the expected time, date, and location of the open burning. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Each prescribed burning applicant will have an operational plan of action documenting contingency actions to follow if prescriptive conditions are exceeded. [1] • If the DEC declares an air quality advisory, it will (1) require that the burn be extinguished immediately; (2) suspend all new ignitions in the area; (3) request voluntary emission curtailments from any person issued a permit whose facility's emissions might impact the area subject to the advisory; and (4) publicize actions to be taken to protect public health. [1], [2] • Limitations may have to be placed on the burn for easy shutdown. [1] • Placing limitations on all burns is part of the contingency plan. If a burn is not easily extinguished, then it is not of a manageable size and is therefore not under control. Failure to be able to extinguish a burn may result in enforcement actions. [2]

Smoke Management Program Component	State
	Alaska
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The DEC will, in its discretion, declare an air episode and prescribe and publicize curtailment action when the concentration of an air contaminant in the ambient air has reached, or is likely in the immediate future to reach established concentrations. [1] • The term “established concentrations” is a misnomer because we only have monitors in four towns. We use visibility and public complaints in other areas to determine when a burn needs to be extinguished. We have the ability to monitor PM₁₀ in emergencies, but funding and staff are limited. We have a new group organized specifically for monitoring of water and air. We follow EPA SOP requirements. [2] • Concentrations are established in the rules for three episode types and four air contaminants. The episode types are: Air alert, Air warning, or Air emergency. The contaminants are: sulfur dioxide, PM₁₀, PM₁₀ from wood burning (wood smoke control areas), and carbon monoxide. (Please see table at the end of this survey for the concentrations triggering an air episode) [1] • Concentrations for PM_{2.5} will be added after the data collection period is concluded. [2]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Public education and outreach is a large part of SMP and air compliance. DEC policy is geared more toward public education versus enforcement. Programs are usually focused for specific air criteria for specific locations (i.e. wood stove smoke and wood stove program for Juneau). Elements consist primarily of fact sheets, special pamphlets, media stories, and websites. The television and newspaper media have been very helpful in assisting DEC with air quality issues and educating the public. DEC policy is to focus on “customer service” to best serve the public. Open burn approvals for large prescribed burns require public meetings and newspaper notification prior to ignition, as well as “interpreters” near the burn. This decreases public complaint calls and encourages interaction with the public. [2]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Public complaints generally “monitor compliance” during controlled burns. A good working relationship between DEC and land managers has greatly assisted compliance and emission reduction techniques. [2]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Response to a “Notice of Violation” (NOV) is usually all that is required in order to ensure that the permittee prevents the incident from recurring. [2]

Smoke Management Program Component	State
	Alaska
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Burn reports are submitted for controlled burns when they are available, although very little post-burn evaluation is done in the state. [2] • For land clearing, a summary report listing types of fuels and quantities burned, days burning occurred, and the meteorological conditions during the burn may be required by the DEC as part of the approval conditions. [1]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The program consists of only one person. Budget cuts do not allow for adequate program evaluation at this time. [2]
21. What are the review criteria?	<ul style="list-style-type: none"> • Not applicable. [2]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • There are some “sensitive areas” in the state that require more attention than others. These primarily consist of populated areas that have experienced difficulties with smoke impacts in the past, due to topographical, meteorological, or other types of circumstances. [2]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Not applicable. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Not applicable. [2]

Smoke Management Program Component	State
	Alaska
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> Nuisance regulations apply to prescribed fires, but not to prescribed natural fires. Criteria for establishing a “nuisance” includes documentation from a safety or health authority in the area, photos, and number of complaints (particularly those with health effects). [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> Not at this time. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> Not applicable. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> No. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> No. [2]

Smoke Management Program Component	State
	Alaska
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Yes, but the time line is unknown. [2]

**Concentrations Triggering an Air Episode
(from Alaska question 15)**

Episode Type	Air Contaminant	Concentration (micrograms per cubic meter)
Air alert	Sulfur dioxide	365 (24-hour average)
	PM-10	150 (24-hour average)
	PM-10 from wood burning (wood smoke control areas)	92 (24-hour average)
	Carbon monoxide	10,000 (8-hour average)
Air warning	Sulfur dioxide	800 (24-hour average)
	PM-10	350 (24-hour average)
	Carbon monoxide	17,000 (8-hour average)
Air emergency	Sulfur dioxide	1,600 (24-hour average)
	PM-10	420 (24-hour average)
	PM-10 from wood burning (wood smoke control areas)	During an air alert, a concentration measured or predicted to exceed 92 (24-hour average), and to continue to increase beyond the concentration that triggered the air alert
	Carbon monoxide	34,000 (8-hour average)

Source of summary information:

- [1] Rules for Smoke Management Program. Arizona Department of Environmental Quality, Air Quality Assessment Section. Title 18, Chapter 2, Article 15, available at: <http://www.adeq.state.az.us/environ/air/assess/smp.html>.
- [2] Comments received from Arizona Department of Environmental Quality dated August 20, 1999.
- [3] Comments received from Arizona Department of Environmental Quality dated September 14, 2000.

Other available information:

- Electronic copies of the Burn Plan Form, Burn Request Form, and a Burn Accomplishment Form are also available at <http://www.adeq.state.az.us/environ/air/assess/smp.html>.
- Electronic copies of the Arizona Administrative Code, guidelines, and permit application form regarding open burning are available at www.adeq.state.az.us/environ/air/permit/openburn.html.

Special Note:

- This survey was reviewed by the Arizona Department of Environmental Quality. For more information, contact Mark Fitch, AZ DEQ, Air Quality Division, 3003 N. Central Avenue, Phoenix, AZ, 85012-2905.

Smoke Management Program Component	State
	Arizona
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	• The Department of Environmental Quality (DEQ) has the central authority to make burn/no burn decisions on state/federal wildlands or burns on private lands assisted by state/federal land managers. The DEQ has no authority on tribal lands in Arizona. [1][3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	• The DEQ may enter into a memorandum of agreement with any Indian tribe. [1] • Provide interest posting of burn approvals (state site and SWICC). [3] • There are no formal MOUs. [3] • Will call New Mexico if there is a large burn near the border. [3]

Smoke Management Program Component	State
	Arizona
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Federal and state land managers are required to conduct prescribed burning according to Arizona Administrative Code, R18-2 Article 15 which applies to all areas of the state except Indian Trust lands. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • Prescribed/controlled burning of forest and rangeland fuels on federally managed lands and all state lands, parks and forests. [1][3] • Prescribed natural fires (wildland fire that is ignited by natural causes and allowed to continue burning using the same controls as for prescribed burning) projected to attain a size of 50 acres of timber fuel or 250 acres of brush or grass fuel. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Each year land managers must register with the DEQ all planned burn projects for the following year. Each planned year extends from August 1 of the registration year to July 31 of the following year. Managers should register burn projects before August 1 of each year. [1] • Next, the manger must submit a Burn Plan form to DEQ no later than 14 days before the date on which the manager requests permission to burn or have a burn plan on file from the previous year. [1][2] • Lastly, the manager must complete and submit to DEQ a Burn Request form by 2 p.m. local time of the business day preceding the burn day. [1][2][3] • The DEQ then makes a decision on the request issuing by 5 p.m. of the business day prior to the burn day, a notice of approval, approval with conditions, or disapproval. [2]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The manager must have registered with the DEQ, submitted a Burn Plan form (no later than 14 days before the manager requests permission to proceed with a registered burn project), and submitted a Burn Request form (by 2 p.m. of the business day preceding the burn). [1] • The DEQ will evaluate a burn on based on a smoke dispersion evaluation which considers the following: (1) emissions from burns in progress and previous burns on a day-to-day basis, (2) emissions from active prescribed natural fires, (3) emissions from wildfires greater than 100 acres, (4) local burn conditions, (5) burn and smoke management prescriptions from the Burn Plan, (6) Local air quality, (7) Local meteorological conditions, (8) Type and location of area to be burned, (9) Protection of visibility in Class I Areas, and (10) Smoke impacts in Class I Areas, roads, highways, airports, PM and carbon monoxide non-attainment areas. [1][2] • The DEQ will approve, approve with conditions, or disapprove a burn on the same business day as the Burn Request submittal based on the DEQ's Smoke Dispersion Evaluation. [1] • The manager must receive burn approval from the DEQ, however if the manager does not receive approval by 10 p.m. of the business day preceding the burn, the burn is deemed approved. [1] • All burns must be conducted by trained personnel. Requirements are stated in the rule. [1][2]

Smoke Management Program Component	State
	Arizona
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The smoke management program rules are applicable only to Federal and state land managers. [1] Therefore, the program rules are essentially an operating agreement between the DEQ and the Federal and State land managers. • Indian tribes may opt to enter into a memorandum of agreement to implement the program rules. [1] • Interagency Agreement for the Air Resource and Interagency Smoke Management Program establishes the Interagency Smoke Management Coordinator (ISMC) and the assistant ISMC at DEQ. [3] • All burns must be conducted by personnel trained in prescribed fire and smoke management techniques to the minimum level required by the Federal or state land manager in charge of the burn. [1] • A Prescribed Fire Manager or other local Fire Management Officer of the Federal or state land manager having jurisdiction over prescribed burns must have smoke management training obtained through either 1) completion of a National Wildfire Coordinating Group or Federal/state land manager-equivalent course dedicated to smoke management or 2) attendance at an DEQ-approved smoke management workshop. [1]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • DEQ tracks FLM NEPA documents for this purpose. [3] • The regulations do not discuss specific alternatives to fire as a land management tool; however, one of the BMP that managers must consider is reducing biomass by using techniques such as yarding or consolidation of unmerchandiseable material, multi-product timber sales or public firewood access, when economically feasible. [1] • The SMP does not discuss incentives or disincentives for burning alternatives and emission reduction techniques. • Yes, emission reductions are tracked qualitatively. On or before August 15 of each year, each Federal or state land manager must submit to DEQ a report generally describing the emissions reductions for each project from the previous year as a result of using BMP. [1]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The manager must implement as many best management practices (BMP) for emission reduction as are feasible for the specific burn. A list, of 15 measures considered BMPs, is included in the program rules. See attached pages B-7 and B-8 for the list. [1] • The Burn Accomplishment form must include the BMPs used to manage smoke from the burn. [1] • If weather conditions cease to conform to those in the smoke management prescription of either the Burn Plan or an approval with conditions, the Federal or state land manager must cease ignitions and take appropriate action to reduce further smoke impacts, unless after consultation with the DEQ, the smoke management prescription is modified. [1]

Smoke Management Program Component	State
	Arizona
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The manager must implement as many BMP for emission reduction as possible for the specific burn and include the techniques used in the Burn Accomplishment report. [1] • Data is used to develop a database to qualitatively track emission reductions. [3]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • The manager must complete and submit to DEQ a Burn Plan form no later than 14 days before the date on which the manager requests permission to burn. The Burn Plan form must contain (1) an emergency telephone number that is answered 24 hours a day, (2) burn prescription, (3) smoke management prescription, (4) the number of acres to be burned, the type of fuel and the ignition technique to be used, (5) a map depicting the potential impact of the smoke. (6) modeling of smoke impacts for burns greater than 250 acres in size or greater than 50 acres in size if within 15 miles of a Class I Area, (7) the name of the official submitting the burn plan on behalf of the Federal or state land manager, and (8) any other information needed by the DEQ. [1] (See web site for approved form for burn plans.) [3] • A burn plan must also be submitted for a prescribed natural fire. [1]

Smoke Management Program Component	State
	Arizona
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • The burn plan must include 1) a map depicting the potential impact of the smoke and a map, with smoke-sensitive areas delineated, of the daytime and nighttime smoke path and down-drainage flow for an area of 15 miles from the burn site and 2) modeling of smoke impacts for burns greater than 250 acres per day, or greater than 50 acres per day, if the burn is within 15 miles of a Class I Area, a PM or carbon monoxide non-attainment area, or other smoke sensitive area. [1] • DEQ will approve, approve with conditions, or disapprove a burn by evaluating the following factors: (1) emissions from burns in progress and residual emission from previous burns on a day-to-day basis, (2) emissions from active prescribed natural fires and consideration of potential long-term emissions, (3) emissions from wildfires greater than 100 acres and consideration of potential long-term growth, (4) local burn conditions, (5) burn and smoke management prescription from burn plan, (6) existing and predicted local air quality, (7) local and synoptic meteorological conditions, (8) type and location of areas to be burned, (9) protection of the national visibility goal for Class I Areas, and (10) minimization of smoke impacts in Class I Areas, roads or highways, airports, PM and CO non-attainment areas, and other smoke-sensitive areas. [1] • The DEQ may require the manager to monitor weather and air quality before or during a prescribed burn to accurately predict smoke impacts. [1] • For burns greater than 250 acres per day, or greater than 50 acres per day if the burn is within 15 miles of a Class I Area, a PM or carbon monoxide non-attainment area or other smoke sensitive area, the manager must employ the following types of monitoring to predict smoke impacts: (1) The release of pilot balloons at the burn site to verify needed wind speed, direction or stability, (2) Establishment of burn site or area-representative remote automated weather stations (RAWS) or their equivalent, having telemetry that allows retrieval on a real-time basis by the DEQ, and (3) Smoke plume measurements using a format supplied by the DEQ. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Information on approved burns is available on the internet. [2] • Local land management agencies have lists of contacts/concerned public they communicate with when burning. • Most agencies also use local radio to inform the public of fire activity. [2]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • For prescribed natural fires, consultation with DEQ is required if smoke intrusions occur or are predicted. [2] • For prescribed fires, land managers report smoke impacts on the accomplishment form and are trained to communicate to DEQ when smoke intrusions occur. The ISMC tracks the status of burns and smoke effects through public complaints and direct interaction with the burners. [2]

Smoke Management Program Component	State
	Arizona
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The DEQ may require Federal or State land managers to monitor weather and air quality before and during a burn if necessary to accurately predict smoke impacts. • For burns greater than 250 acres per day, or greater than 50 acres per day if the burn is within 15 miles of a Class I Area, an area that is non-attainment for PM or carbon monoxide, or other smoke-sensitive area, monitoring must employ: (1) the release of pilot balloons at the burn site to verify needed wind speed, direction or stability, and (2) smoke plume measurements. [1] • The DEQ may use remote automated weather station (RAWS) data to verify current and previous meteorological conditions at or near the burn site. [1] • The manager must make the monitoring information available to the DEQ on the business day following the burn ignition. [1] • The number and location of public complaints are used to monitor air quality impacts of fires. [2] • DEQ has required PM monitoring on some burns. [3] • No trigger points beyond NAAQS. [3] • Public complaints affect decision making. [3] • DEQ is establishing monitoring sites with real-time telemetry to track air quality conditions and smoke effects. [3]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The DEQ and Federal and State land managers may cooperate to inform the general public of the smoke management program. The program must include smoke impacts from prescribed fire and the role of prescribed fire in natural ecosystems. [1] • The SMP does not elaborate any further than described above on the issue of public education and awareness. • No public education program established currently. [3] • Internet posting and field offices inform public where to go for information on burning activity. [3] • ARS 18-2-15 went through formal Arizona rulemaking which includes public hearings. [3] • No ongoing public outreach beyond web-site. [3]

Smoke Management Program Component	State
	Arizona
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The DEQ may conduct unannounced burn site inspections to verify the accuracy of Daily Burn request data and to match burn approval with actual conditions and smoke dispersion. [1] • The DEQ may use remote automated weather station data to verify current and previous meteorological conditions at or near the burn site. [1] • The DEQ may audit burn accomplishment data, smoke dispersion measurements, or weather measurements from previously conducted burns, if necessary to verify conformity with, or deviation from, procedures and authorizations approved by DEQ. Deviation from DEQ's procedures and authorizations constitute a violation of the rules; violations may include a 5-day moratorium on ignitions by the responsible manager. [1] • Aerial surveillance is frequently used to monitor compliance and DEQ will use monitoring sites to verify impacts. [2][3]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Noncompliance may cause (1) containment or mop-up of any active burns, (2) a 5-day moratorium on ignitions of the responsible party, and (3) civil penalties of not more than \$10,000 per day per violation. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • For each burn approval, the manager must submit a Burn Accomplishment form by 2 p.m. of the business day following the approved burning. [1] • The Burn Accomplishment form must contain (1) any known conditions or circumstances that could impact the daily burn decision process, (2) subsequent acreage accomplishments, and (3) the BMP used to manage the smoke from the burn. [1]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The regulations do not specifically include provisions to periodically review their effectiveness; however, the DEQ maintains a record of Burn Requests, Burn Approvals/Conditional Approvals/Denials and Burn Accomplishments for 5 years. [1] • Complaints about smoke from burning are tracked and investigation of complaints is required to determine the cause of complaint. [2] • Program assessment occurs through annual evaluation of ISMC position. Daily interactions between DEQ and land managers through the coordinator keep program review on a constant basis. [2]
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	State
	Arizona
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Smoke-sensitive areas must be delineated on a map (included in the Burn Plan) depicting the potential impact of the smoke for 15 miles from the burn site. [1] • The Burn Plan requires modeling of smoke impacts for burns greater than 50 acres per day, if the burn is within 15 miles of a Class I Area, roads, highways, airports, areas that are non-attainment for PM and carbon monoxide and other smoke-sensitive areas. [1] • The DEQ will approve, approve with conditions or disapprove a daily Burn Request based on a DEQ Smoke Dispersion Evaluation which takes into consideration protection of the national visibility goal for Class I Areas pursuant to 169A(a)(1) of the Act, and minimization of smoke impacts in Class I Areas, roads, highways, airports, areas that are non-attainment for PM and carbon monoxide and other smoke-sensitive areas. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Operationally, prevention of consecutive day smoke impacts of sensitive areas are the goal of the decision making process. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Generally results in disapproval of subsequent day burn request. [3]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Yes, we use complaints from the public as the criteria to establish that smoke from a prescribed or prescribed natural fire is a nuisance. [2] [3] • DEQ tracks these complaints, as a mean to review how well the program is working. [2] • Number of complaints is not a trigger—individual occurrence and nature of complaints, external verification of conditions is also used prior to action. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Arizona’s SMP is part of our Payson PM₁₀ SIP. [2]

Smoke Management Program Component	State
	Arizona
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • DEQ does not use fees to run our program. [2] • The budget for DEQ Program comes from a MOA with Fed/State land managers, and the State. [2] • Program has grown as areas requested have grown. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • DEQ tracks burning actions on a daily basis. [2] • From post burning reports, due within 24 hours of the burn, DEQ calculates the PM10 emissions from each burn. [2] [3] • DEQ uses: acres burned, fuel moisture, fuels <3" in diameter, fuels > or equal to 3" in diameter, fuel type and AP42 emission factors to calculate air pollutant emissions. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • We do not have a way to quantitatively track this information at this time beyond qualitative tracking of BMP use. [2] [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Yes, Fall of 2000. [3]

Source of summary information:

- [1] Title 17, Smoke Management Guidelines. California Code of Regulations. March 23, 2000.
 [2] Comments received from the California Air Resources Board, November 9, 2000.

Special Notes:

- Title 17 provides general direction to the air districts on developing smoke management plans. Additional changes to Title 17 have been proposed but as of yet have not been adopted. This survey is based on the March 23, 2000 version of Title 17.
- This survey was reviewed by the Northern Sierra Air Quality Management District and the U.S. Forest Service. For more information, contact Rod Hill, Northern Sierra AQMD, P.O. Box 2509, 200 Litton Drive, Suite 320, Grass Valley, CA, 95945, or Trent Procter, USFS, 900 West Grand Avenue, Porterville, CA, 93257.

Smoke Management Program Component	State
	California
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Air Resources Board (ARB) will specify each day of the year as a permissive burn day, or a no-burn day for each air basin or other specified area. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The Smoke Management Guidelines for Agricultural and Prescribed Burning (Guidelines) provide direction to air pollution control and air quality management districts (air districts) in the regulation and control of agricultural burning, including prescribed burning, in California. [1] • Each air district must adopt a smoke management program (SMP) consistent with the Guidelines. The Guidelines are intended to provide flexibility to air districts in the development and implementation of their smoke management programs. [1] • In general, by September 1, 2000, all air districts must implement the prescribed burning elements of their programs and, by July 1, 2001, all air districts must adopt SMPs. Program approvals will be made by the ARB.[1] • Two or more air districts choosing to implement a regional SMP must execute a MOU that sets forth procedures for the coordination, implementation and enforcement of shared responsibilities. The MOU must describe the following: a list of district and region boundaries; participating federal and/or state land managers, and other local entities within the region; the decision-making structure of the regional SMP; and the joint workplan for implementing the regional SMP. [1]

Smoke Management Program Component	State
	California
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Each air district must adopt a smoke management program (SMP) consistent with the Guidelines. Each air district or region shall develop its SMP in coordination with the ARB and appropriate fire protection agencies, the land managers having jurisdiction within the district, any other affected parties, and the public. [1] • The Guidelines are not intended to permit open burning on days when such burning is prohibited by public fire protection agencies for purposes of fire control or prevention. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The Guidelines regulate agricultural burning, which includes prescribed burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • A valid permit must be obtained from a district or designated agency prior to burning. Each applicant for a permit must provide information requested by the district and the designated agency. [1] • Air district SMPs must include procedures for acquiring information on amounts of material burned on each day, on planned and unplanned wildfires, and other information needed to establish the burn authorization for the following day. [1] • Air district SMPs must require registration of all planned burn projects annually or seasonally, including areas considered for potential naturally-ignited wildland fires managed for resource benefits, with updates as they occur. • Air district SMPs must require submission of smoke management plans (burn plans) within 72 hours of the start of the fire for naturally-ignited wildland fires managed for resource benefits that are expected to exceed 10 acres. [1] • Air district SMPs must require the permit applicant to file with the district a statement from the Department of Fish and Game certifying that the burn is desirable and proper if the burn is to be done primarily for improvement of land for wildlife and game habitat. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The ARB will announce by 3:00 p.m. every day for each of the state's air basins or other specified areas whether the following day is a permissive burn day or no-burn day, or whether the decision will be announced on the following day. If conditions preclude a forecast until the next day, the decision will be announced by 7:45 a.m.[1] • Burning must comply with all conditions specified on the permit, which must have district approval consistent with the Guidelines. [1] • An air district may, by special permit, authorize burning on days designated by the ARB as no-burn days if the denial of such permit would threaten imminent and substantial economic loss. [1] • Air district SMPs must include procedures for authorizing burning, including a procedure for authorizing individual prescribed burns no more than 24 hours prior to ignition of fire. [1] • Air district SMPs must require district review and approval of smoke management plans (burn plans). [1]

Smoke Management Program Component	State
	California
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Air district SMPs must require, as appropriate, daily coordination between the land manager or his/her designee and the air district or the ARB for multi-day burns which may impact smoke sensitive areas, to affirm that the burn project remains within the conditions specified in the smoke management plan (burn plan), or whether contingency actions are necessary. [1]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of non-burn alternatives. [1] • Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain an evaluation of alternatives to burning considered. [1]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • In the case where, by special permit, an air district authorizes burning on days designated by the ARB as no-burn days, a district will limit the amount of material which can be burned in any one day and only authorize burning which is not likely to cause or contribute to exceedences of air quality standards or result in smoke impacts to smoke sensitive areas. [1] • Air district SMPs must include a daily burn authorization system that regulates burning in order to minimize smoke impacts on smoke sensitive areas, avoid cumulative smoke impacts, and prevent public nuisance. [1] • Air district SMPs must include procedures for addressing cross-jurisdictional smoke impacts by coordinating with neighboring air districts, regions, or states. [1] • Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices. [1] • Air district SMPs must provide, if necessary, procedures for prioritizing burning that districts can use to minimize smoke impacts. Efforts to reduce smoke emissions must also be considered. [1] • Air district SMPs must require vegetation to be in a condition that will minimize the smoke emitted during combustion when feasible. [1] • Air district SMPs must require material to be burned to be piled where possible, unless good silvicultural practices or ecological goal dictate otherwise. [1] • Air district SMPs must require piled material to be burned to be prepared so that it will burn with a minimum of smoke. [1]

Smoke Management Program Component	State
	California
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Districts SMPs must include plans to provide for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [2]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Air district SMPs must require the submission of smoke management plans for all burn projects greater than 10 acres or estimated to produce more than one ton of particulate matter. These plans must contain, at a minimum, the following information: location, types, and amounts of material to be burned; expected duration of the fire from ignition to extinction; identification of responsible personnel, including phone contacts; and identification and location of all smoke sensitive areas. [1] • Air district SMPs must require the submission of more detailed smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain the information above and the following additional information: identification of meteorological conditions necessary for burning; the smoke management criteria the land manager or his/her designee will use for making burn ignition decisions; projections, including a map, of where the smoke from burns is expected to travel; specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan; an evaluation of alternatives to burning considered; and discussion of public notification procedures. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Air district SMPs must include a daily burn authorization system that will not allow more burning on a daily basis than is appropriate for the meteorological or air quality conditions. Meteorological conditions to be evaluated include wind speeds and directions at the surface and aloft, and atmospheric stability. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain discussion of public notification procedures. [1] • Air district SMPs must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1]

Smoke Management Program Component	State
	California
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Air district SMPs must require the submission of smoke management plans for burn projects greater than 100 acres or estimated to produce more than 10 tons of particulate matter. These plans must contain specific contingency actions that will be taken if smoke impacts occur or meteorological conditions deviate from those specified in the plan. [1]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Air district SMPs must include a description of the meteorological and air quality monitoring data to be used to provide data for determining the basinwide meteorological and air quality conditions. [1] • Air district SMPs must require smoke management plans (burn plans) to include appropriate monitoring as required by the district for the following burn projects: projects greater than 250 acres; projects that will continue burning or producing smoke overnight; projects conducted near smoke sensitive areas; or as otherwise required by the district. [1]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Air district SMPs must require procedures for public notification and education, including appropriate signage at burn sites, and for reporting of public smoke complaints. [1] • The ARB has established a working group which will develop recommendations for public education and outreach efforts. The ARB also has a web site where information relating to ARB's smoke management program is posted. [2] • The revisions to Title 17 (ARB's smoke management guidelines) went through an extensive public outreach process, including three program scoping sessions, 15 workshops, and 23 meetings with affected stakeholders. [2]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Air district SMPs must include procedures for enforcement. The Guidelines do not further elaborate on enforcement procedures. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Air district SMPs must include procedures for enforcement. The Guidelines do not further elaborate on enforcement procedures. [1]

Smoke Management Program Component	State
	California
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • A report of burning conducted pursuant to the Guidelines each year must be submitted to the ARB by each air district. The report will include the estimated tonnage or acreage of each waste type burned from open burning in agricultural operations and the estimated tonnage of waste from prescribed burning, and the county where the burning was performed. [1] • When an electronic reporting system is established by the ARB, it will be used for providing reports of burning. • A yearly report of air district special permits, which authorize burning on days designated by the ARB as no-burn days, must be submitted to the ARB by each air district. The report must include the number of special permits issued, dates of issuance, person(s) to whom the permit was issued, an estimate of the amount of wastes burned pursuant to the permit, and a summary of why denial of each permit would have threatened imminent and substantial economic loss. [1] • Air district SMPs must require a post-burn smoke management evaluation by the burner for fires greater than 250 acres. [1]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The Guidelines are intended to assure adequate state oversight, including initial program approval and periodic program assessment. [1] • Air district SMPs must provide plans for analysis and periodic assessment of actions that are undertaken to minimize smoke through the use of pre-fire fuel treatment practices and non-burn alternatives. [1]
21. What are the review criteria?	<ul style="list-style-type: none"> • See Question 20.
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Burns greater than 10 acres must identify the location of smoke sensitive areas. [2]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The ARB’s smoke management program provides a collaborative framework to provide for increased opportunities for managed burning while allowing California to meet health-based air quality standards and federal visibility requirements. No specific “performance standards” however have been adopted. [2]

Smoke Management Program Component	State
	California
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Not applicable. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The State and many local counties do have nuisance regulations which apply to smoke impacts from prescribed and agricultural burning. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • The districts' current smoke management rules are included as part of the SIP. New rules adopted due to the new requirements of the revisions to Title 17 will supersede the old rules when new PM and regional haze SIPs are submitted. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Costs associated with implementation and operation of the SMP are addressed by individual districts. As provided by State law, districts can recover costs associated with the compliance with State requirements by fees on sources that engage in burning through permit fees. The structure for assessing fees varies by district. The ARB is also committed to working with all stakeholders, including districts and affected sources, to fund the SMP and is developing funding proposals to provide technical and monitoring support. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The State compiles estimates of prescribed burning emissions. These estimates are computed by local districts. The level of effort and completeness of these estimates varies. All of the districts compile annual estimates, but these estimates are not necessarily updated each year. Generally the emission estimates include seasonal profiles which can be used to apportion annual emissions by month based on historical burning trends. Daily estimates are not computed. In most regions, prescribed fire emissions are based upon either permitted acreage, or post-burn annual summaries. It is not yet common practice to base emission estimates on fire-specific post-burn reports that include information on fuel type, condition, and consumption. However, the State is involved in efforts to substantially improve the completeness and uniformity of prescribed burning emission estimates. [2]

Smoke Management Program Component	State
	California
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Not at the current time. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Information not provided.

Source of summary information:

- [1] Regulation 5: Open Burning, amended November 2, 1994
- [2] Regulation 5 Open Burning Notification Form
- [3] Open Burning Advisory-Prescribed Burning for Wildland Vegetation Management and Wildlife Management. Available at <http://www.baaqmd.gov/enf/com:lnce/burnchgs.htm>.
- [4] BAAQMD Permissive Burn Periods-Summary Table. Available at <http://www.baaqmd.gov/enf/complnce/openburn.htm>.
- [5] BAAQMD Open Burning. Available at <http://www.baaqmd.gov/enf/complnce/opnbntbl.htm>
- [6] Help Keep the Air Clean-Open Burning Information (brochure)

Special Notes:

- The State of California is currently revising the Agricultural Burning Guidelines in Title 17 of the California Code of Regulations. These changes will require the CA Air Quality Management Districts to revise their local regulations.
- This survey was reviewed by the Bay Area Air Quality Management District. For more information, contact Ellen Garvey, BAAQMD, 939 Ellis Street, San Francisco, CA, 94109-7799.

Smoke Management Program Component	Bay Area Air Quality Management District (BAAQMD)
	California
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The public officials who have the authority to approve a proposed burn are as follows: State Forester or Public Fire Official for range management (prior BAAQMD notification required), Fire Official for forest management, State Fish & Game for wildlife management, State or Federal Fire Official for wildland vegetation management (prior BAAQMD notification required). [4][6] • Any proposed burn may also be restricted by local fire or other officials. [5]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The District coordinates with the California Air Resources Board (ARB). [1] • For wildlife management, the CA Dept. of Fish and Game declares the fire necessary and provides the Air Pollution Control Officer (APCO) with the burn information. [1] • The APCO coordinates with the CA Dept. of Fish & Game and the Solano County Mosquito Abatement District to extend the burn period in the event that heavy winter rainfall prevents burning. [1] • For fires conducted within the boundaries of the Suisun Resource Conservation District (SRCD), the total daily acreage to be burned is determined by the APCO during the Fall Burning period. [1]

Smoke Management Program Component	Bay Area Air Quality Management District (BAAQMD)
	California
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • To conduct a prescribed burn for wildland vegetation management, the burner must submit a prescribed burn plan to the APCO for review at least 30 calendar days prior to the proposed burning. The burn plan must include a smoke management plan. [1] • Open burning is limited to days when air pollution caused by controlled fires would be minimized. [6]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The regulations allow the following types of fires on permissive burn days: agricultural (disease and pest, crop replacement, orchard pruning, and attrition, double cropping), range management, forest management, wildlife management and wildland vegetation management. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Before any fire is set, the burn must be authorized by the public official having jurisdiction in the burn area. [6] • A fire permit may also be required by local ordinances. [6] • To conduct a prescribed burn for wildland vegetation management, the burner must submit a prescribed burn plan to the APCO for review at least 30 calendar days prior to the proposed burning and, prior to ignition, notify the APCO on the day of each burn. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • An allowable burn day must be declared during the allowed time of year for the specific type of burn. [4][6] • The burn must be authorized by the public official having jurisdiction in the area of the burn. [6] • Prior written, verbal or FAX notification to the BAAQMD must be made by the person setting certain types of fire. [2] • For certain types of fire, prior written APCO approval must be secured. [2] • Fires may be set only after sunrise and when wind velocity is 5 miles per hour or greater. [6]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The information does not discuss if operating agreements have been established between the central authority and land managers, if there are any requirements for burner qualifications, or if smoke management training is available.

Smoke Management Program Component	Bay Area Air Quality Management District (BAAQMD)
	California
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Information not provided.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • No burning should take place before sunrise. [1] • No additional materials or fuel should be ignited or added to a fire after 2 hours before sunset. [1] • Wind velocity must be 5 miles per hour or greater except for crossfiring, or when the wind direction at the site would cause smoke to drift toward a populated area. [1] • Piled material must dry for a minimum of 60 days prior to ignition. [1] • Material to be burned must be free of dirt or soil. [1] • Ignition material is limited to those listed by the State Director of Forestry and all fires should be ignited so as to burn as rapidly as possible. [1] • Ignition must be initiated at or near the top of the piled material. [1] • Tonnage, volume or acreage of material burned on any given day and/or at any specified site is subject to limitations set by the APCO, but may not exceed any limits set by the ARB. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The information does not discuss if the actions taken to minimize emissions before and during fires must be documented.
<i>Smoke Management Components of Burn Plans</i>	

Smoke Management Program Component	Bay Area Air Quality Management District (BAAQMD)
	California
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> Any person seeking to conduct a prescribed burn for wildland vegetation management must submit a prescribed burn plan to the APCO for review at least 30 calendar days prior to the proposed burning. The burn plan must contain the following information: location and specific objectives of the burn; acreage or tonnage, type, and arrangement of vegetation to be burned; direction and distances to nearby sensitive receptor areas; fuel condition, combustion and meteorological prescription elements for the burn; projected schedule and duration of ignition, combustion and burn down; specifications for monitoring and of verifying critical parameters; specifications for disseminating project information; certification by a resource ecologist, biologist, or forester that the proposed burning is necessary to achieve the specific management objective(s) of the burn plan; and a smoke management plan. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> The information does not specifically discuss how smoke dispersion conditions must be evaluated, how visibility impairments and/or regional haze is accounted for in the SMP nor if burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal." However, allowable fires may only be ignited on an allowable burn day and when wind velocity is 5 miles per hour or greater. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> The burn plan must include specifications for disseminating project information. [1] No additional information is available.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> Information not provided.
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> The burn plan must include specifications for monitoring and of verifying critical parameters. [1]

Smoke Management Program Component	Bay Area Air Quality Management District (BAAQMD)
	California
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The BAAQMD has prepared a brochure titled “Open Burning Information” which includes the following: when to burn, an open burning calendar, a review of Regulation 5, information on open burning and air pollution, a list of telephone numbers for more information, the telephone number to call for burn/no burn day information. [6] • The BAAQMD web site contains information that may be of interest to the public, including general burning information, Regulation 5 and a permissive burn periods summary table. The home page for the BAAQMD is available at http://www.baaqmd.gov. • Bay area citizens can report illegal fires by calling the BAAQMD complaint hotline at 1-800-334-ODOR. [6]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Information not provided.
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Under state law, violations of the BAAQMD’s open burning regulations may be subject to civil penalties of up to \$10,000 per day. [6]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • For prescribed burning for wildland vegetation management the burner must provide, within 30 calendar days of the burn, the total acreage and the volume or tonnage of vegetation actually burned. [1]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Information not provided.
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	Bay Area Air Quality Management District (BAAQMD)
	California
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • For wildlife management fires conducted within the boundaries of the SRCD the following applies: a prior acreage burning allocation must be received from the Solano County Sheriffs’ dispatch; during the Fall burning period, total daily acreage to be burned is determined by the APCO, but the total allocation will not exceed 300 acres; no more than 100 acres of any property and no more than 100 acres of all properties designated by the SRCD hundred-series ownerships will be burned; and during the Spring burning period, no more than 600 acres total of all properties will be burned in a single day. [1] • The burn plan must include the directions and distances to nearby sensitive receptor areas. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Information not provided.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Information not provided.
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	Bay Area Air Quality Management District (BAAQMD)
	California
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • The District staff initiated a rulemaking effort to develop new requirements in District Regulation 3: Fees, that would impose new burn permit fees for wildland vegetation management fires (i.e., prescribed burns) and wildlife management fires (i.e., marsh or tule burns). The initial fee proposed includes \$810 fee for each burn plan submitted and an additional fee based on the actual acreage burned. For prescribed burns - \$480 per acre burned. For marsh/tule burns - \$156 per acre burned. [3] • The District staff is also exploring fee alternatives such as cost sharing, other funding sources and different fee proposals. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Information not provided.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Information not provided.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Information not provided.

Source of summary information:

- [1] Northeast Air Alliance Smoke Management Plan.
- [2] Comments received from USDA Forest Service, Quincy, CA on August 3, 2000 and Susanville, CA on September 22, 2000.

Special Notes:

- A smoke management plan is not required for prescribed burn projects less than 10 acres in size.
- This survey was reviewed by the USDA Forest Service. For more information, contact LouAnn Charbonnier, USDA-FS, 159 Lawrence Street, P.O. Box 11500, Quincy, CA, 95971, or Larry Hood, USDA-FS, Lassen National Forest, 2550 Riverside Drive, Susanville, CA, 96130.

Smoke Management Program Component	Northeast Air Alliance (NEAA)
	California
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The appropriate air district official approves or disapproves the smoke management plan, which is part of the overall burn plan review process. The smoke management plan serves as a conditional permit to burn, when used in conjunction with its standard single-page permit to burn. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The smoke management plan is a cooperative agreement among the Northeast Air Alliance (NEAA) members. [1] • The NEAA coordinates with the appropriate air districts in review and approval of the smoke management plan. Individual air districts may require supplemental information if the proposed burn project is extremely large, likely to adversely impact smoke sensitive areas such as a Class I airshed, likely to have multi-jurisdictional smoke impacts, or contain other site-specific complexities which would require the need for further information. [1] • Region 5 has a MOU with the California Air Resource Board. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • A smoke management plan is required for all prescribed burn (forest management, range improvement and wildland vegetation management burning) conducted by land managers within the area encompassed by the NEAA. [1]

Smoke Management Program Component	Northeast Air Alliance (NEAA)
	California
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • Forest management (described as the use of open fires as part of forest management practice to remove forest debris or for forest management practices which include timber operations, silvicultural practices, or forest protection practices), range improvement (described as the use of outdoor fires to remove vegetation for wildlife, game or livestock habitat or for the initial establishment of an agricultural practice on previously uncultivated land) and wildland vegetation management (described as the use of prescribed burning conducted by a public agency, or through a cooperative agreement with a private manager or contract involving a public agency, to burn land predominately covered by chaparral, trees, grass, or standing brush) burning as well as wildfire managed for resource benefit (described as the use of naturally occurring fire exceeding ten acres in size to achieve resource management objectives) are covered by the smoke management plan. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Land managers must complete the smoke management plan and submit it to the appropriate air district official. For wildfire managed for resource benefit, the smoke management plan must be submitted within 72 hours of project declaration. The smoke management plan contains the following 15 sections: I. General Information, II. Project Information, III. Emissions Estimates, IV. Wind Prescription, V. Smoke Dispersal Surveillance and Monitoring, VI. Identification of Smoke Sensitive Areas, VII. Mitigations, VIII Evaluation of Alternatives to Burning, IX Contingencies, X. Public Notification, XI. Complaint Procedures, XII. Contacting Responsible Officials, XIII. Certification, XIV. Maps, XV. Reports and XVI. Approvals. [1] • For burn projects primarily implemented for wildlife and game habitat improvement, the land manager must file with the appropriate air district a statement from the California Dept. of Fish and Game certifying that the burn is desirable and proper and specifying if any brush treatment or other objectives which are desired. The USDA Forest Service is not required to get a statement from California Dept. of Fish and Game [1][2] • The land manager must comply with all applicable air district and State of California regulations. The smoke management plan is one part of an overall burn plan review process. Individual air districts may require supplemental information if the proposed burn project is extremely large, likely to adversely impact smoke sensitive areas such as a Class I airshed, likely to have multi-jurisdictional smoke impacts, or contain other site-specific complexities which would require the need for further information. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The land manager must have an approved smoke management plan, be in compliance with all State, District and local regulations and submit the certification from the California Dept. of Fish and Game (if necessary). [1]

Smoke Management Program Component	Northeast Air Alliance (NEAA)
	California
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> Title 17 and R5 Supplement 5140 (draft) establishes some additional qualifications needed if burning in a nonattainment area. [2]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> Evaluation of alternatives to burning are addressed in the applicable National Environmental Policy Act (NEPA) documents. This document is attached to the SMP or a detailed narrative of how alternatives to burning were considered is included in the SMP. [2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> The following mitigation actions may be required for an approved smoke management plan: the number of acres or piles to be burned per day may be limited; the number of piles to be burned at one time may be limited; the hours between ignition of piles/units may be specified; mop-up may be required after a certain number of hours of ignition; ignition times may be limited. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> The actions taken to minimize emissions before and during fires are specified in the smoke management plan. [1]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> Written burn plans are required by the air districts. The smoke management plan does not discuss what information must be included. [1]

Smoke Management Program Component	Northeast Air Alliance (NEAA)
	California
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Smoke monitoring is required if the project is conducted near smoke sensitive areas or if the smoke from the project may impact smoke sensitive areas, smoke monitoring is required on all projects over 250 acres/day and on those projects that would continue burning or producing smoke overnight. [1] • Smoke dispersal surveillance and monitoring is accomplished by the following methods indicated in the smoke management plan: balloon, RAWS, aircraft, visual monitoring, weather forecast and on-site weather observations. [1] • A test burn is conducted on a small portion of the project area prior to project implementation. [1] • As part of the smoke management plan, the land manager must provide a wind prescription that describes ideal, acceptable and unacceptable wind direction and identification of potential meteorological conditions that would inhibit acceptable smoke dispersal. [1] • The smoke management plan asks the land manager to indicate if the burn project is likely to impact a Class I airshed. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Public notification actions are required to advise the public and known sensitive receptors that prescribed burning will be conducted in their vicinity and to assure the public that measures will be taken to minimize the smoke impacts. The land manager must comply with all the public notification actions indicated in the smoke management plan. These actions may include notification by radio, newspaper, television, posters/flyers/letters, personal contact and signing. [1] • If potential impacts are identified in Section VI (Identification of Smoke Sensitive Areas) of the smoke management plan, additional notifications may be required within the potentially impacted area. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • If adverse smoke impacts affect any smoke sensitive area the following contingency actions may be required: halt ignitions (except as needed to maintain control of the fire), allow the fire to burn to contingency control lines, suppress the fire, begin immediate mop-up, begin mop-up within a certain number of hours of problem identification and complete mop-up within a certain number of initiation. [1]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Smoke monitoring is required on all projects over 250 acre/day, those that would produce emissions over multiple days, and projects near smoke-sensitive areas. The land manager must list the method/location of visual monitoring and the interval between dispersal monitoring observations in the smoke management plan. [1] • The land manager must provide a wind prescription that describes ideal, acceptable and unacceptable wind direction and identification of potential meteorological conditions that would inhibit acceptable smoke dispersal. [1]
<i>Public Education and Awareness</i>	

Smoke Management Program Component	Northeast Air Alliance (NEAA)
	California
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> A public education and awareness program has been identified by the NEAA as a future action item. Currently public notification of burning is done through one or more of the following, which is identified in the SMP: radio, newspaper, television, posters/flyers/letters, personal contact, and signing.
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> All smoke related complaints must be forwarded immediately to the appropriate air district and a log of all complaint calls related to a burn project is kept in the project file folder for a period of one year from the conclusion of the burn project. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> None at this time. When fully implemented penalties in CA State Health and Safety Code will apply. [2]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> A post-burn smoke management evaluation/summary is required to be kept in the project folder and is subject to review by the appropriate air district. The available information does not discuss what information is required. [1]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> Post burn smoke management evaluations are subject to review by the Air District. California Air Resources Board (CARB) will periodically review statewide effectiveness. [2]
21. What are the review criteria?	<ul style="list-style-type: none"> Title 17 of the California Administrative Code. [2]

Smoke Management Program Component	Northeast Air Alliance (NEAA)
	California
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The smoke management plan does not describe smoke sensitive areas but does ask the land manager to identify them on a map. [1] • The smoke management plan asks the land manager to indicate if the burn project is likely to impact a Class I airshed. [1] • If adverse smoke impacts affect any smoke sensitive area the following contingency actions may be required: halt ignitions (except as needed to maintain control of the fire), allow the fire to burn to contingency control lines, suppress the fire, begin immediate mop-up, begin mop-up within a certain number of hours of problem identification and complete mop-up within a certain number of initiation. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Performance standards are to maintain State and Federal ambient air quality standards and avoid public nuisance per State Health and Safety Code section 41700. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Unknown. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Yes. [2] • Yes. [2] • Each Air District determines criteria. One district uses 3 un-orchestrated complaints as nuisance criteria. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Unknown. [2]

Smoke Management Program Component	Northeast Air Alliance (NEAA)
	California
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • This varies by Air District. Currently some charge permit and acreage fees. Other districts fund programs through general program revenues. Once Title 17 is finalized permit fees will be implemented and it is anticipated that more districts will be supported by fees. The basis for fees will be determined by each district and will probably be a combination of permit fees, and acreage fees that may vary by type of burn. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Section III of the smoke management plan asks land managers to estimate total PM₁₀ emissions in tons. [1] • Some Air Districts maintain an inventory and some do not. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Actions vary greatly by project but methods utilized for minimizing emissions include biomass thinning, and removal of unutilized material. Section VII Mitigations in the SMP include options for limiting ignition to specified number of acres/piles per day; limiting number of acres/piles burned at one time; hours between ignition of piles/units; limiting ignition times. Section IX of the SMP includes contingencies for mop up. There are no mechanisms in place at this time to record emission reductions achieved. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Not at this time. [2]

Source of summary information:

- [1] Northern Sierra Air Quality Management District Regulation III-Open Burning. Available at <http://www.nccn.net/~nsaqmd/rule300.htm>.
- [2] Northern Sierra Air Quality Management District Smoke Management Plan, Y2K Burn Season, dated February 14, 2000.

Special Notes:

- The Air Pollution Control Officer of the Northern Sierra Air Quality Management District may exempt burn projects, which consist of five acres or less in size, from many of the requirements listed below unless the fuel loading rate exceeds 30 tons/acre average.
- The State of California is currently revising the Agricultural Burning Guidelines in Title 17 of the California Code of Regulations. These changes will require the CA Air Quality Management Districts to revise their local regulations.
- This survey was reviewed by the Northern Sierra Air Quality Management District. For more information, contact George Ozanich, NSAQMD, P.O. Box 3981, Quincy, CA, 95971.

Smoke Management Program Component	Northern Sierra Air Quality Management District (NSAQMD)
	California
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	• The Air Pollution Control Officer (APCO) of the Northern Sierra Air Quality Management District (NSAQMD) reviews and approves burn plans. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	• The NSAQMD coordinates with the California Air Resources Board (ARB) for burn day determinations. [1]

Smoke Management Program Component	Northern Sierra Air Quality Management District (NSAQMD)
	California
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • A smoke management plan is required for all prescribed burns (forest management, range improvement and wildland vegetation management burning) greater than five acres in size. The burner must fill out the smoke management plan form and submit it to the NSAQMD for approval. The required information is used to evaluate the effectiveness of the smoke management efforts of the burn project. Once approved by the NSAQMD, the smoke management plan serves as a conditional permit to burn, when combined with the standard single page permit to burn. [2] • Burners not covered under the smoke management plan may have to get a burning permit. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The smoke management plan discusses forest management burning (described as the use of open fires as part of a forest management practice, to remove forest debris or for forest management practices which include timber operations, silvicultural practices, or forest protection practice), range improvement burning (described as the use of outdoor fires to remove vegetation for a wildlife, game, or livestock habitats or for the initial establishment of an agricultural practice on previously uncultivated land) and wildland vegetation management burning (described as the use of prescribed burning conducted by a public agency, or through a cooperative agreement with a private manager or contract involving a public agency, to burn land predominately covered with chaparral, trees, grass, or standing brush). [2] • Regulation III covers agricultural, range improvement, forest management, wildlands vegetation management, land development clearing, ditch and road maintenance, hazard reduction, residential, mechanized and public disposal facility burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • On or before October 1 of each year, the burner must notify the APCO of planned range improvement, forest management and wildlands vegetation management burn projects for the upcoming year. [1] • For range improvement burns over 5 acres the burner must obtain a valid permit and submit a burn plan and a smoke management plan. The burner must also submit to the APCO a written statement from the Department of Fish and Game that certifies that the burning is desirable and proper. [1][2] • For range improvement, forest management and wildland vegetation management burns, the burner must submit a request for notice to the ARB at least seven days before the date of the burn and receive a permissive-burn or no-burn notice. [1][2] • For forest management and wildlands vegetation management burns over 5 acres the burner must obtain a valid permit and submit a burn plan and a smoke management plan. [1][2] • For land development clearing, ditch, road and right-of-way maintenance and hazard reduction burns the burner must obtain a valid permit and submit a burn plan. [1]

Smoke Management Program Component	Northern Sierra Air Quality Management District (NSAQMD)
	California
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The burner must have a valid NSAQMD permit, an approved burn plan, an approved smoke management plan, and yearly notification must have been made to the APCO. [1] • Minimum drying times and burn management requirements must be met. [1] • It must be an approved burn day as authorized by the APCO, the ARB, and/or the fire agency with appropriate jurisdiction. [1] • Permissive-burn notice must have been received from ARB for range improvement, forest management and wildland vegetation management burns. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Information not provided.
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The NSAQMD finds it more economically desirable to dispose of wood waste from trees, vines, and bushes from land development clearing by burning instead of burial at a sanitary landfill. [1]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The smoke management plan states that mitigation must be used to reduce smoke impacts and lists the following items to be implemented as conditions of a permit: limiting the number of piles or acres to be burned at one time or per day; requiring mop-up within a certain number of hours, requiring special weather conditions, and requiring burning within a certain time window. [2] • For range improvement burning, if economically and technically feasible, the brush should felled, crushed or uprooted with mechanical equipment, or desiccated with herbicides or dead at least six months prior to the burn. [1] <p style="text-align: right;"><i>Continued on next page</i></p>

Smoke Management Program Component	Northern Sierra Air Quality Management District (NSAQMD)
	California
9. <i>Continued</i>	<ul style="list-style-type: none"> Regulation III states that material to be burned must be arranged so that it will burn with a minimum of smoke; except for large trees (diameter of six or more inches), only the amount that can reasonable be expected to completely burn within the following 24 hours should be ignited in any one day; range improvement and wildlands vegetation management burns must be ignited only with approved ignition devices; material to be burned must be ignited as rapidly as practicable; burning must be curtailed, mitigated, or extinguished when smoke drifts into a nearby populated area or creates a nuisance; material to be burned must be reasonable free of dirt, soil, and moisture, and stacked in such a manner as to insure combustion with a minimum of smoke; and minimum drying time requirements must be met. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> Yes, the actions taken to reduce smoke impacts are listed in the smoke management plan. [2]
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> On or before October 1 of each year, the burner must notify the APCO of planned range improvement, forest management and wildlands vegetation management burn projects for the upcoming year. The notification must include the following information: project number, compartment/unit number, project name, legal description, county, acres, tons/acre, total tons, type of burning and a priority rating for most critical to least critical burns. [1] Written burn plans are required for range improvement, forest management, wildlands vegetation management and land development clearing burns and must be submitted to the APCO for review and approval at least 30 days in advance of the proposed burn. The burn plan requires the following information: Location and specific objectives of the burn; acreage and tonnage, type and arrangement of vegetation to be burned; directions and distance to nearby sensitive receptor areas; fuel conditions, combustion and meteorological prescription elements developed for the project; projected schedule and duration of project ignition, combustion, and burn down; specifications for monitoring and verifying critical project parameters; and specification for disseminating project information. [1] The smoke management plan form requires the following information: general information on location, elevation, vegetation type, acreage, project type and category; emissions estimates; wind direction; smoke dispersal surveillance and monitoring; identification of smoke sensitive areas; smoke impact mitigation actions; contingency actions; public notification actions; complaint procedures; responsible official contact information; and burn project maps. [2]

Smoke Management Program Component	Northern Sierra Air Quality Management District (NSAQMD)
	California
<i>Smoke Management Components of Burn Plans</i>	
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • The smoke management plan must include a wind prescription that includes ideal, acceptable and unacceptable surface and aloft wind direction. Potential meteorological conditions that would prohibit acceptable smoke dispersal must be identified. [2] • The burn plan must include specifications for monitoring and verifying critical project parameters. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • The smoke management plan requires actions to advise smoke sensitive areas that burning is planned and to assure that actions are being done to minimize the impact of smoke. The actions may include the following types of notification: radio stations, newspaper, posters/ flyers/letters, television, door-to-door, signing and personal phone calls. The burner must describe the activity and timing. Additional notifications may be required if smoke sensitive areas are expected to be impacted. [2] • The burn plan requires specifications for disseminating project information. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Contingency actions must be taken if smoke impacts a smoke sensitive area. The contingency actions that are required may include the following: stop ignitions, except as needed to maintain control of fire; fire suppression; immediate mop-up; mop-up within a certain number of hours and complete mop-up within a certain number of hours. The burner must list the equipment that will be on-scene or readily available to implement the contingency actions. [2]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Smoke surveillance and monitoring is accomplished by all of the techniques indicated in the smoke management plan. The techniques can include test fires, balloon, RAWs, aircraft, and visual monitoring. Method and location of visual monitors and the interval of smoke dispersal monitoring are also listed in the smoke management plan. [2] • The burn plan must include specifications for monitoring and verifying critical project parameters. [1]

Smoke Management Program Component	Northern Sierra Air Quality Management District (NSAQMD)
	California
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> Although the available information does not specifically discuss a public education program, there are established public complaint procedures listed in the smoke management plan [2]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> All smoke related complaints must be forwarded immediately to the NSAQMD and a log of all complaint calls related to a burn project is kept in the project file folder for a period of one year from the conclusion of the burn project. [2]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> Violation of the Regulation III is a misdemeanor, punishable by criminal or civil penalties and the cost of putting out the fire. Every day during any portion of which such violation occurs, constitutes a separate offense. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> Information not provided.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> Information not provided.
21. What are the review criteria?	<ul style="list-style-type: none"> Information not provided.

Smoke Management Program Component	Northern Sierra Air Quality Management District (NSAQMD)
	California
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The smoke management plan identifies the following smoke sensitive areas: populations centers (e.g. towns, villages, developments), hospitals, schools, daycare centers, nursing homes, shopping centers, public events, and may also include campgrounds and trails inhabited by significant numbers of people. [2] • The smoke management plan asks the burner to identify (distance and direction from the fire) smoke sensitive areas or receptors that could be adversely affected by the burn. [2] • Contingency actions may be required if smoke sensitive areas are impacted by the burn. [2] • If smoke sensitive areas are expected to be impacted by the burn, additional public notifications may be required within the impacted area. [2] • All open burning is banned in the American Valley (all land within the boundaries of the Quincy Fire Protection District) from November 15 to March 15 of each year, except for at least 15 days when burning is allowed in the fall (the burn season may be extended to achieve 15 days if there are not 15 days in which to burn during November 15 to March 15). If a burn season is extended, burn hours for agricultural burning are restricted to the hours of 10 a.m. to 4 p.m. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The smoke management plan requires that all smoke related complaints must be forwarded immediately to the NSAQMD and a log of all complaint calls related to a burn project is kept in the project file folder for a period of one year from the conclusion of the burn project. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • The prescribed fire manager or incident commander will seek resolution for all complaints as necessary. [2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Regulation III states that burning must be curtailed, mitigated, or extinguished when smoke drifts into a nearby populated area or creates a nuisance. [1]

Smoke Management Program Component	Northern Sierra Air Quality Management District (NSAQMD)
	California
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	• Information not provided.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	• Information not provided.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	• Information not provided.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• The emission reductions realized by utilizing the reduction techniques listed in Section VI of the smoke management plan are recorded in the smoke management plan as tons of PM ₁₀ . [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• Information not provided.

Source of summary information:

- [1] Rule 4103 Open Burning, amended December 16, 1993. Available at <http://www.arb.ca.gov/DRDB/SJU/CURHTML/R4103.HTM>.
- [2] Memorandum of Understanding Between the San Joaquin Valley Unified Air Pollution Control District and Land Management and Fire Protection Agencies. August 20, 1998.
- [3] Personal communication between Jose Martinez (San Joaquin Valley Unified Air Pollution Control District, and Barbara Bauer (EC/R Incorporated) on June 29, 2000.
- [4] Comments received from the San Joaquin Valley Unified Air Pollution Control District on August 3, 2000.

Special Notes:

- The State of California is currently revising the Agricultural Burning Guidelines in Title 17 of the California Code of Regulations. These changes will require the CA Air Quality Management Districts to revise their local regulations. In response to the upcoming Title 17 changes, the San Joaquin Valley Unified Air Pollution Control District has prepared a revised draft Rule 4103 (Open Burning) and Rule 3160 (Prescribed Burning Permit, Burn Plan Review, and Smoke Management). These draft rules are available at <http://www.valleyair.org/rules/1rulesdeveloping.htm>. This survey is based on the current Rule 4103 amended on December 16, 1993.
- This survey was reviewed by the San Joaquin Valley Unified APCD San Joaquin Valley Unified Air Pollution Control District. For more information, contact Dave Jones, SJVUAPCD, Planning Section, 1990 East Gettysburg, Fresno, CA, 93726.

Smoke Management Program Component	San Joaquin Valley Air Pollution Control District (SJVUAPCD)
	California
Authorization to Burn	

Smoke Management Program Component	San Joaquin Valley Air Pollution Control District (SJVUAPCD)
	California
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The San Joaquin Valley Air Pollution Control District (SJVUAPCD) reviews the smoke management plan or the smoke management section of the burn plan. After the smoke management section/plan is approved the SJVUAPCD issues a burn/no burn ignition authorization. [3][4] • The land manager conducts prescribed burning and issues permits within areas of their jurisdictional authority in accordance with the conditions of the existing Memorandum of Understanding (MOU). [2] • Under Title 17 of the CA Health and Safety Code, the SJVUAPCD has the responsibility of regulating prescribed burning activities within the boundaries of the San Joaquin Valley Air Basin through SJVUAPCD Rule 4103, Open Burning. [2]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • Regional burn/no burn day declaration decisions are coordinated with the State of California Air Resources Board (CARB). [4] • A formal MOU exists between the SJVUAPCD and Land Management and Fire Protection Agencies (referred to as Signatories in this survey). The purpose of the MOU is to establish a formal working relationship between the SJVUAPCD and land managers in the development and implementation of methods of reducing emissions of PM-10 from prescribed burning practices. The goal of this MOU is to provide a process for involving the land managers in air quality improvement efforts by identifying the anticipated working relationship between the land managers and the SJVUAPCD. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Land managers must prepare a burn plan that contains a smoke management plan section. [2] • The burning of 10 or more acres or the potential emissions of 1 or more tons requires a smoke management plan. [3]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The Rule covers all open burning including agricultural (open outdoor fires used in agricultural operations in the growing of crops or raising of fowl or animals, or open outdoor fires used in forest management, range improvement, wildland vegetation management, or the improvement of land for wildlife and game habitat, or disease or pest prevention. Agricultural burning also includes open outdoor fires used in the operation or maintenance of a system for the delivery of water in agricultural operations), field crop, range improvement (the use of open outdoor fires to remove vegetation for a wildlife, game, or livestock habitat, or for the initial establishment of an agricultural practice on previously uncultivated land), forest management (the use of open, outdoor fires, as part of a forest management practice, to remove forest debris. Forest management practices include timber operations, silvicultural practices, or forest protection practices), and wildland vegetation management burning (the use of prescribed burning conducted by a public agency, or through a cooperative agreement or contract involving a public agency, to burn land predominantly covered with chaparral (as defined in section 1561.1, Title 14, California Code of Regulations) or trees, grass, or standing brush). [1]

Smoke Management Program Component	San Joaquin Valley Air Pollution Control District (SJVUAPCD)
	California
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Land managers must submit a burn plan (based on the requirements of their agency and jurisdiction), which includes a smoke management plan, within 30 days in advance of the date(s) of the prescribed burn. The SJVUAPCD reviews the smoke management plan section and calculates emissions and, if found adequate, results in automatic SJVUAPCD approval as submitted. [2][3] • On the day of the intended ignition the SJVUAPCD would issue an authorization to ignite. This authorization is not given in advance. A SJVUAPCD issued authorization to ignite is based on the amount of estimated emissions, the existing meteorological factors, the expected duration of the burn, and other RX burning in the area. [4] • In the SJVUAPCD approval of the permit would constitute permission to conduct the burn. [4]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Land managers must have a burn plan that contains a reviewed smoke management plan section. An approved smoke management plan section serves as a permit to burn. [3] • The land manager must comply with Title 17 of the CA Code of Regulations. [2] • For range improvement burning the following minimum requirements apply: no brush or unwanted trees can be burned unless it has been brush treated at least six (6) months prior to the burn provided that is economically and technically feasible; Unwanted trees over six (6) inches in diameter must be felled and dried for six (6) months prior to the burn; and If the burning is to be done primarily for improvement of land for wildlife and game habitat, no permit will be issued unless the applicant has filed with the SJVUAPCD a statement from the Department of Fish and Game certifying that the burn is desirable and proper. The Department of Fish and Game may specify the amount of brush treatment required. [1] • For forest management burning the following minimum requirements apply: unless silvicultural practice dictates otherwise, agricultural waste must not be burned until it has been windrowed or piled where possible; and agricultural waste must be dried as required by the agency issuing the permit. [1] • For wildland vegetation management burning the following minimum requirements apply: burners must comply with subsections 5.2.5, 5.2.6, 5.2.7, 5.2.8, 5.2.9, 5.2.13, 5.2.14, 5.2.15 of SJVUAPCD Rule 4103; the Air Pollution Control Officer (APCO) will regulate the total acreage or tonnage of vegetation that may be burned during any one day within the SJVUAPCD; projects exceeding the quantity of material specified by the APCO to be burned during any one day within the SJVUAPCD, or for projects situated in designated areas specified by the APCO, the following information shall be provided to the SJVUAPCD for review and approval 30 days in advance of the proposed burning: location and specific objectives of the burning; acreage or tonnage, type, and arrangement of vegetation to be burned; directions and distances to nearby sensitive receptor areas; fuel condition, combustion, and meteorological prescription elements developed for the project; projected schedule and duration of project ignition, combustion, and burn down; specifications for monitoring and of verifying critical parameters; and specifications for disseminating project information. [1]

Smoke Management Program Component	San Joaquin Valley Air Pollution Control District (SJVUAPCD)
	California
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • A MOU exists between the SJVUAPCD and Land Management and Fire Protection Agencies. [2] • Signatories must ensure that burns are conducted by personnel qualified in the basic roles of each burn. [2] • Signatories must establish a certification and qualifications process by implementing training seminars and other institutional opportunities for burners to gain the necessary skills in smoke management techniques. The MOU suggests that burner certification/qualification programs similar to those required by Federal agencies may be appropriate. [2]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • One Best Available Control Measure (BACM) techniques discussed in the MOU is to limit the acreage that would otherwise be burned by using: manual/hand labor to remove fuels, chemical treatments, mechanical treatment, chipping, piling and burying. [2]

Smoke Management Program Component	San Joaquin Valley Air Pollution Control District (SJVUAPCD)
	California
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Land managers should use the most effective available emission reduction techniques for reducing emissions. [2] • Land managers must develop a menu or combination of menu items specifying acceptable emission reduction techniques that should be used for each type of burn. [2] • The MOU contains a “Preliminary Prescribed Burning Best Available Control Measures (BACM) Work plan Component Summaries” section. This part of the MOU suggests and describes emission reduction techniques that may be included in the burn plan. The techniques include reduction of the number of acres burned, reduction of pre-burn fuel loading, reduction of fuel consumption, and burning in ways that shifts the proportion of the burn from the smoldering phase to the flaming phase. [2] • The SJVUAPCD’s review of the smoke management plan section of the burn plan focuses on the calculated emissions of the burn. The SJVUAPCD may require revisions to minimize the potential adverse air quality impacts on populated or sensitive areas. [3] • Land managers must immediately notify the SJVUAPCD in the event of unforeseen meteorological occurrences resulting in impacts on populated and other sensitive areas and take appropriate actions to minimize and reduce the impact. [2] • For range improvement burning the following minimum requirements apply: no brush or unwanted trees can be burned unless it has been brush treated at least six (6) months prior to the burn provided that is economically and technically feasible; Unwanted trees over six (6) inches in diameter must be felled and dried for six (6) months prior to the burn. [1] • For forest management burning the following minimum requirements apply: unless silvicultural practice dictates otherwise, agricultural waste must not be burned until it has been windrowed or piled where possible; and agricultural waste must be dried as required by the agency issuing the permit. [1] • For wildland vegetation management burning the following minimum requirements apply: burners must comply with the Agricultural Burning subsections 5.2.5, 5.2.6, 5.2.7, 5.2.8, 5.2.9, 5.2.13, 5.2.14, 5.2.15 of SJVUAPCD Rule 4103; the Air Pollution Control Officer (APCO) will regulate the total acreage or tonnage of vegetation that may be burned during any one day within the SJVUAPCD. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The land managers must prepare and submit to the SJVUAPCD documentation describing the effectiveness of action taken to minimize and reduce impacts to populated and other sensitive areas prior to the next scheduled and approved prescribed burn in the impacted area, but not later than 10 days of the occurrence. [2]
<i>Smoke Management Components of Burn Plans</i>	

Smoke Management Program Component	San Joaquin Valley Air Pollution Control District (SJVUAPCD)
	California
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Burn plans are required and must comply with the requirements of Title 17; Section 80130 Burning Reports, Section 80160 Range Improvement Burning, and Section 80170 Forest Management Burning. [2] • Land managers must have a burn plan that contains a reviewed smoke management plan section. [3]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • Signatories must identify appropriate model(s) and validate model outputs for area-wide and location-specific burn projects. The model should produce quantitative, comprehensive, and reproducible results that allow independent confirmation of the decisions reached. Suggested actions include documenting the use of specific emission estimating and/or plume dispersion models and documenting the use of downwind air quality and meteorological monitoring in sensitive and/or metropolitan areas. [2]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • For wildland vegetation management projects exceeding the quantity of material specified by the APCO to be burned during any one day within the SJVUAPCD, or for projects situated in designated areas specified by the APCO, the burner must provide to the SJVUAPCD specifications for disseminating project information. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Information not provided.
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Signatories must establish surveillance procedures to monitor prescribed burns utilizing visual assessments and collecting air quality samples. Suggested actions include use of a portable smoke and weather monitoring module and use of aircraft to observe meteorological conditions and fire behavior. [2] • For wildland vegetation management projects exceeding the quantity of material specified by the APCO to be burned during any one day within the SJVUAPCD, or for projects situated in designated areas specified by the APCO, the burner must provide to the SJVUAPCD specifications for monitoring and of verifying critical parameters. [1]

Smoke Management Program Component	San Joaquin Valley Air Pollution Control District (SJVUAPCD)
	California
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Signatories must develop a public information and awareness program to inform the general public through coordinated and proactive usage of public contract/public information, broadcast media, and print media. Suggested actions include documented use of park interpreters, community meetings, and other public information efforts. [2] • The SJVUAPCD has a web site that contains the SJVUAPCD's regulations (current and draft) and other information about open and prescribed burning, and smoke management. The web site is available to the public at http://www.valleyair.org.
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The CA Air Resources Board (CARB) has the authority to step in and enforce all provisions of the smoke management program through the SIP. [2] • The SJVUAPCD conducts surveillance to assure compliance with SMP and determine any smoke intrusion into sensitive areas and nuisance violations. [4]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Signatories agree to pursue enforcement actions for any violation of applicable burning regulations. [2] • Through the MOU, the SJVUAPCD agrees to provide enforcement actions to assure compliance with the adopted BACM. [2]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Signatories must submit to the SJVUAPCD a post-burn report no later than 10 days upon completing a prescribed burn project. [2] • Signatories agree to participate in the Prescribed Fire Incident Reporting System (PFIRS) program to coordinate and report prescribed burning activity within the SJVUAPCD. [2]
<i>Program Evaluation</i>	

Smoke Management Program Component	San Joaquin Valley Air Pollution Control District (SJVUAPCD)
	California
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Through the MOU, the SJVUAPCD agrees to prepare an annual report using CARB and SJVUAPCD air monitoring stations data, post-prescribed burning reports, or an approved Air Quality Impacts Summary Form submitted by the land managers to evaluate the effectiveness of the BACM and to estimate emission reductions. [2] • The MOU may be modified as necessary upon written consent of all parties. [2]
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Although special protection zones are not specifically listed or described, for wildland vegetation management projects exceeding the quantity of material specified by the APCO to be burned during any one day within the SJVUAPCD, or for projects situated in designated areas specified by the APCO, the burner must provide to the SJVUAPCD the directions and distances to nearby sensitive receptor areas. [1] • Land managers must immediately notify the SJVUAPCD in the event of unforeseen meteorological occurrences resulting in impacts on populated and other sensitive areas and take appropriate actions to minimize and reduce the impact, and land managers must prepare and submit to the SJVUAPCD documentation describing the effectiveness of action taken to minimize and reduce impacts to populated and other sensitive areas prior to the next scheduled and approved prescribed burn in the impacted area, but not later than 10 days of the occurrence. [2]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Information not provided.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	San Joaquin Valley Air Pollution Control District (SJVUAPCD)
	California
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • No agricultural burning is permitted that will create a nuisance as defined in section 41700 of the CA Health and Safety Code. [1]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • According the MOU, land managers agree to develop and submit management practices to the SJVUAPCD for incorporation into the SIP that demonstrate emission reductions that equal or exceed BACMs to be used to prevent and/or minimize adverse air quality in the SIP developed for the SJVUAPCD. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Information not provided.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Signatories agree to develop and maintain an emissions inventory for prescribed burning based on estimates of tons of fuel consumed and the appropriate emission factors (AP-42 or specific to burns). Suggested actions include developing and documenting pre-fire and post-fire emission estimates and developing an annual tracking and reporting system of emissions. [2] • Signatories agree to participate in the Prescribed Fire Incident Reporting System (PFIRS) program to coordinate and report prescribed burning activity within the SJVUAPCD. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Through the MOU, the SJVUAPCD agrees to prepare an annual report using CARB and SJVUAPCD air monitoring stations data, post-prescribed burning reports, or an approved Air Quality Impacts Summary Forms submitted by the land managers to evaluate the effectiveness of the BACM and to estimate emission reductions. [2]

Smoke Management Program Component	San Joaquin Valley Air Pollution Control District (SJVUAPCD)
	California
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Land managers agree to develop and submit management practices to the SJVUAPCD for incorporation into the SIP that demonstrate emission reductions that equal or exceed BACMs to be used to prevent and/or minimize adverse air quality in the SIP developed for the SJVUAPCD. [2]

Source of summary information:

- [1] Rule 444: Open Fires, Amended October 2, 1987. Available at <http://www.aqmd.gov/rules/html/r-444.html>.
- [2] AQMD Open Burning Policy Fact Sheet. Available at <http://www.aqmd.gov/news/burnfct.html>.
- [3] Personal communication between Gilbert Vita (SCAQMD, 909-396-2418) and Barbara Bauer (EC/R Incorporated, 919-933-9501) on June 2, 2000.
- [4] Comments received from the SCAQMD, dated December 20, 2000.

Special Notes:

- The State of California is currently revising the Agricultural Burning Guidelines in Title 17 of the California Code of Regulations. These changes will require the CA Air Quality Management Districts to revise their local regulations.
- This survey was reviewed by the South Coast Air Quality Management District. For more information, contact Gilbert Vita, SCAQMD, 21865 Copley Drive, Diamond Bar, CA, 91765.

Smoke Management Program Component	South Coast Air Quality Management District (SCAQMD)
	California
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	• The South Coast Air Quality Management District (SCAQMD) Meteorologist makes the burn/no burn decision. [3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	• The SCAQMD coordinates with the California Air Resources Board (ARB). [3]

Smoke Management Program Component	South Coast Air Quality Management District (SCAQMD)
	California
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> Neither the regulation nor the fact sheet specifically discuss a smoke management program; however, burners have certain requirements as described in the response to Question #9.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> Forest management and agricultural burning are discussed in the regulation and fact sheet. [1][2]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> Permits from the SCAQMD and the local fire department are required for any type of allowable open burning. [2] For wildland vegetation management burns, an implementation plan must be approved by the Executive Officer. [1] For wildland vegetation management burn projects, specific information must be provided to the SCAQMD for review and approval in advance of the proposed burning. [1][4]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> All burning must be conducted during an approved burn day. However, the local fire protection agency can receive a waiver to conduct training fires as specified pursuant to Rule 444(e) on a designated no burn day by contacting the SCAQMD and requesting a variance. [2][4] All needed permits and approvals must be in place. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> Land managers must qualify as an agricultural burner as defined in Rule 444. [4]
<i>Minimizing Air Pollutant Emissions</i>	

Smoke Management Program Component	South Coast Air Quality Management District (SCAQMD)
	California
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Alternatives to open burning include hauling the debris to a landfill dump site or chipping, shredding, mulching or power-plant burning. Emission reductions are not being tracked for any of these operations. [2][4]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The wildland vegetation management implementation plan must: limit ignition of fires to approved devices; regulate the total acreage or tonnage of vegetation that can be burned each day within the SCAQMD; regulate burning or require mitigation when the meteorological conditions could otherwise cause smoke to create or contribute to an exceedance of a state or Federal ambient air quality standard or cause a public nuisance; require the vegetation to be burned be reasonably free of dirt or soil; and require the vegetation to be in a condition which will facilitate combustion and minimize the amount of smoke emitted during combustion. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Prescribed burns only defines burn parameters or as burn or no-burn criteria. [4]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Wildland vegetation management burning can not be conducted until an implementation plan is approved by the Executive Officer. [1] • For wildland vegetation management burn projects exceeding a predetermined size or tonnage threshold level, or for projects situated in zones specified by the SCAQMD, the implementation plan must include the following information to be provided to the SCAQMD for review and approval in advance of the proposed burning: location and specific objectives of the burn project; acreage or tonnage, type and arrangement of vegetation to be burned; directions and distances to nearby sensitive receptor areas; fuel condition, combustion, and meteorological prescription elements developed for the project; projected schedule and duration of project ignition, combustion and burndown; specifications for monitoring and verifying critical project parameters; and specifications for disseminating project information. [1]

Smoke Management Program Component	South Coast Air Quality Management District (SCAQMD)
	California
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Information not provided.
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Prescribed burns only where the public is notified. [4]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Information not provided.
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • For wildland vegetation management burn projects exceeding a predetermined size or tonnage threshold level, or for projects situated in zones specified by the SCAQMD the burner must provide to the SCAQMD specifications for monitoring and verifying critical project parameters. [1]
<i>Public Education and Awareness</i>	

Smoke Management Program Component	South Coast Air Quality Management District (SCAQMD)
	California
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The SCAQMD open burning policy fact sheet and Rule 444-Open Fires is available to the public on the Internet. [1][2]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Notice of violations are served if compliance is not achieved. [4]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • For non-compliance, SCAQMD follows the guidelines of California Health and Safety Code, where penalties in the worst cases can be up to \$50,000 per day per violation and may include criminal sanctions. [4]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Post-burn reports are not required. [4]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Information not provided.
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.
<i>Optional Air Quality Protection</i>	

Smoke Management Program Component	South Coast Air Quality Management District (SCAQMD)
	California
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • For wildland vegetation management burn projects situated in zones specified by the SCAQMD, specific information, including directions and distances to nearby sensitive receptor areas, must be provided to the SCAQMD for review and approval in advance of the proposed burning. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Information not provided.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Rule 402 Nuisance applies to prescribed, agricultural and all types of burns. [4]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Rule 444 is part of the State Implementation Plan (SIP) which was accepted by the State but denied by the EPA. [4]

Smoke Management Program Component	South Coast Air Quality Management District (SCAQMD)
	California
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • The SMP is funded by SCAQMD's general budget fund. Currently, there are no fees (i.e. permit fees, registration fees, etc.) assessed to burners. [4]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The SCAQMD does maintain a daily pollutant emission inventory from prescribed, agricultural and all types of fires. The emission inventory and report are submitted annually to CARB. [4]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Currently there is no mechanism in place to calculate and record the air pollutant emission reductions achieved. [4]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Information not provided.

Source of summary information:

- [1] Colorado Smoke Management Memorandum of Understanding & Plan. Prepared by the Air Pollution Control Division. January 1, 2001. The Colorado Smoke Management Memorandum of Understanding & Plan includes: a summary of responsibilities of the signatories, a time line of activities, the Colorado smoke management plan, permit application forms APC-95A and APC-95B, vista data base, and local health agency contact list. The Colorado Smoke Management Memorandum of Understanding & Plan can be found at <http://apcd.state.co.us/smoke/smoke.html>.
- [2] Comments received from the Colorado Department of Public Health and Environment dated August 27, 1999.
- [3] Comments received from the Colorado Department of Public Health and Environment dated September 20, 2000.

Special Note:

- This survey was reviewed by the Colorado Department of Health. For more information, contact Coleen Campbell, CDH, 4300 Cherry Creek Drive South, APCD-B1, Denver, CO, 80246.

Smoke Management Program Component	State
	Colorado
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	• The Colorado Air Pollution Control Division (APCD) is responsible for making burn/no burn decisions by approving or disapproving permit applications. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	• The following organizations are signatories to the Colorado Smoke Management Memorandum of Understanding and Plan (MOU): Colorado Air Pollution Control Division, Colorado Division of Wildlife, Colorado State Forest Service, US Air Force Academy, USDA Forest Service, USDI Bureau of Indian Affairs, USDI Bureau of Land Management, USDI Fish and Wildlife Service, and USDI National Park Service. [1]

Smoke Management Program Component	State
	Colorado
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The signatories of the MOU agree to abide with the Colorado SMP, which includes ensuring proper smoke management of prescribed fires conducted by the signatories. [1] • Projects not covered by the SMP must submit Form APC-24 (Application for Open Burning Permit) for specific projects. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • Acceptable burning projects within the MOU are: (1) Hazardous fuel reduction, (2) Slash disposal from timber sales and roads constructed within contract areas, (3) Wildlife and livestock habitat improvement, (4) Forest stand improvement, (5) Insect and disease control, (6) Water yield improvement, (7) Maintenance of natural ecosystems, (8) Maintenance of threatened and endangered species, and (9) Other vegetative management improvement projects. [1] • The APCD is prohibited by state law from requiring permits for agricultural burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • No planned ignition prescribed fire may be initiated without first obtaining a permit from the APCD. For planned ignition prescribed fires, an application for a permit for each planned burn must be completed using Form APC-95A. An application may be submitted at any time, but must be submitted at least 20 days prior to the burn date. Many district offices submit permit applications in November or December for all potential prescribed burning areas during the up coming year. The APCD, after review and decision, will inform the applicant of the granting of the permit in total or in part or the denial of the permit within 20 days after receipt of a complete application. The permit application must contain simple approach smoke estimation model (SASEM) output, explicitly showing those conditions under which the burn will be conducted and visibility impacts on smoke sensitive areas. [1] • Applications for prescribed natural fire are made on an annual basis using Form APC-95B. The application will be reviewed and approved or denied. The permit application must contain a plan and a map showing the area for natural fire. [1] • Projects not considered part of forest and public land management projects must submit Form APC-24 for specific projects. The APCD will process those complete applications within 20 days as they are received throughout the year. [1]

Smoke Management Program Component	State
	Colorado
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • For planned ignition prescribed fires: (1) The application must be approved, (2) The project must be acceptable within the MOU, (3) There should not exist any practical alternative to open burning, (4) The applicant must demonstrate that the project does not violate applicable ambient air quality standards, (6) The applicant must comply with applicable fire protection and safety requirements, and (7) The permits must be valid for the dates listed on the permit. Extension or modification of dates must be approved by the APCD. The APCD will consider (1) potential contribution to area air pollution, (2) climatic conditions on the day or days of burning and (3) proximity to populated areas. [1] • Each land management organization signatory to the MOU is responsible for proper smoke management for prescribed fires it conducts and, on a case-by-case basis, identifies and implements the best smoke management techniques appropriate to minimize the amount and /or impact of smoke produced. [1] <p><i>Continued on next page</i></p>
6. <i>Continued</i>	<ul style="list-style-type: none"> • If the APCD determines that the burn is degrading air quality to levels expected to violate air quality standards, suppression action will be promptly initiated. [1] • To the degree practical, all burning must be done during periods conducive to smoke dispersal, to be determined by using the best meteorological information reasonably available. [1] • For prescribed natural fire: (1) an annual application must be approved, (2) the APCD must be notified by telephone as soon as possible, but no later than two hours after the start of the next working day of the prescribed natural fire area if the fire exceeds one acre. [1] • For projects not covered by the MOU, and that are not agricultural burns, an open burning permit is required. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • A MOU exists between the APCD and large land managers in which the signatories agree to follow the SMP. [1] • Burner qualifications are not discussed in the SMP. • The land management agencies and the Colorado APCD will develop and present interagency training to promote understanding of the regulatory context and effects of air pollution as well as fire ecology and smoke management. [1]
Minimizing Air Pollutant Emissions	

Smoke Management Program Component	State
	Colorado
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Although specific alternatives are not discussed, the signatories of the MOU must consider practical alternatives to burning and may conduct prescribed burning only if there are no practical alternatives. The APCD reserves the right to reject a project for which there appears to be a reasonable alternative to burning. [1] • The SMP does not discuss incentives or disincentives for alternative burning and emission reduction techniques. • The Colorado APCD is responsible for developing an emission inventory for pollutants of interest from the burning activity reported annually. [1]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Each land management agency signatory must apply the best smoke management techniques in order to minimize smoke impacts and emissions. The land manager will select appropriate smoke management techniques on a case-by-case basis. [1] • As practical, all burning must be done during periods conducive to smoke dispersal. Each signatory shall endeavor to use the best meteorological information reasonably available. [1] • For planned ignitions, a single test fire may first be ignited to indicate local mixing depths. [1] • All piled material must be reasonably dry and free of dirt. [1] • In plans for prescribed fires, each land management organization will have an operational plan identified enabling it to reduce fire emissions, eliminate ignitions in certain areas, or take appropriate suppression action. Contingency plans will be implemented when meteorological conditions warrant, acceptable limits of smoke accumulation are or will be exceeded, and/or it is anticipated that the prescription for a particular fire will be exceeded. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The permit application for planned ignition prescribed fires must include a demonstration that the project will not violate applicable ambient air quality standards. [1]
<i>Smoke Management Components of Burn Plans</i>	

Smoke Management Program Component	State
	Colorado
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • For planned ignition prescribed fire, signatories must complete one permit application using Form APC-95A, for each planned burn. This permit application requests the following information: (1) The name of the organization applying for the permit and the contact's name, address, telephone number, (2) Location of the burn, total acreage or description of piles, and the type of project, (3) Information regarding the proximity of populated areas to the planned project, (4) Procedures for notification of smoke sensitive areas, and (5) The planned burn dates and the meteorological/climatic conditions under which the burn is planned. In addition, the following information must accompany the permit application: (1) Model output from Simple Approach Smoke Estimate Model (SASEM) or a refined model, which has prior approval of the APCD, (2) A demonstration, conducted with SASEM, that the project will not violate applicable ambient air quality standards, (3) a completed Smoke Risk Rating Worksheet, and (4) Procedures to ensure compliance with applicable fire protection and safety requirements. [1] • For projects not covered by the MOU and that are not agricultural burns, burners must submit Form APC-24 (Application for Open Burning Permit). [1] <p style="text-align: right;"><i>Continued on next page</i></p>
11. Continued	<ul style="list-style-type: none"> • For prescribed natural fire, the signatories must complete a permit application on an annual basis using Form APC-95B. This permit application must include: (1) The name of the organization applying for the permit and the contact's name, address, telephone number, (2) Location of the burn, (3) Information regarding the proximity of populated areas to the burn. In addition, a plan and a map showing the area for natural fire, must accompany the initial permit application. [1][3]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • The permit application for planned ignition prescribed fires must include a demonstration, conducted with SASEM, that the project will not violate applicable ambient air quality standards. [1] • For planned ignitions, a single test fire may first be ignited to indicate local mixing depths. [1] • Burners are required to use the National Weather Service information. [1] • Burners managing projects with a Smoke Risk Rating of high must consult with NWS prior to burning to determine what "on-site" meteorological data collection is needed to assist NWS in providing a detailed forecast. [3] • Each land management signatory must, on a case-by-case basis, explicitly consider potential visibility impacts of smoke in Class I areas and other scenic and/or important views. Potential visibility impacts of smoke from any prescribed burn must be explicitly considered and factored into the prescription for that burn. [1] • If at any time the responsible land management agency determines that the prescription for a particular prescribed fire has been exceeded (including impacts on visibility) the responsible parties must promptly initiate suppression action. [1]

Smoke Management Program Component	State
	Colorado
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • For prescribed planned fire, burners must contact local agencies and provide the burn's location, date, and duration. Procedures for notification of smoke sensitive areas of burning date(s) for planned ignition projects must be included in the applicant's prescribed burning management plan. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • The land management organization must have a prescribed fire contingency plan in place that will identify how the organization will reduce fire emissions, eliminate ignitions in certain areas, or take appropriate suppression action. [1] • The contingency plans will be implemented when meteorological conditions warrant, or the APCD determines that acceptable limits of smoke accumulation are or will be exceeded, and/or the responsible land management organization anticipates that the prescription for a particular fire will be exceeded. [1]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The responsible signatory must monitor the actual fire to a sufficient level to provide information regarding whether or not the fire is within prescription. Monitoring data collected before, during and after the burn should be used to evaluate the achievement of specific smoke management objectives, and to provide feedback for refinement of future prescriptions. [1] • If pollutant levels are anticipated to create a significant threat to human health, the APCD may require the responsible land management agency to monitor and/or model pollutants in or near population centers impacted by smoke generated from a particular prescribed fire or wildfire. The APCD will assist in identification of instrumentation, site selection, installation of instrumentation, operation, calibration, quality assurance, quality control, laboratory analysis, data interpretation, and supplies. [1]
<i>Public Education and Awareness</i>	

Smoke Management Program Component	State
	Colorado
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • While the SMP does not specifically discuss establishing a public education and awareness program, for prescribed planned fire, burners must contact local agencies and provide the burn's location, date, and duration. [1]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • All prescribed burning operations are subject to inspection by the APCD. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • If at any time the APCD determines that any condition of the permit is not being complied with, the permit may be revoked for the specific project where the non-compliance is occurring. At such time, all burning activities at the site of the non-compliance will be terminated. In addition to revocation of the permit, the APCD may take any other enforcement action authorized under state statutes, rules and regulations. [1]

Smoke Management Program Component	State
	Colorado
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • The signatories must report burning activity annually to the APCD by completing and returning the back page of Form APC-95A or 95B (Actual Fire Activity Forms). The forms must be submitted by March 1st of the year following the permit date. Daily actual activity information must be submitted for projects with a smoke risk rating of high. The form reports fire activity for the previous calendar year's permitted planned ignitions and permitted prescribed natural fires. [1][3] • The Actual Fire Activity Forms request information on: (1) Actual beginning and ending burn dates, (2) Actual acreage burned, (3) Fuel loading determination method, and (4) fuel types. [1] • Signatories are asked to annually share information on individual wildfires, the number of acres consumed, their location and other available information that occurred on their lands or on land about which they receive information during the previous calendar year. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The MOU signatories agree to meet annually and evaluate the prescribed fire program, permitting and data collection system, and review and modify the Smoke Management Plan where necessary. [1]
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.
Optional Air Quality Protection	
22. Does the program establish any "special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The SMP defines smoke sensitive areas as Class I areas, scenic and/or important views, especially during times of significant visitor use, urban and rural population centers, schools, hospitals, nursing homes, transportation facilities such as roads and airports, recreational areas, and other locations that may be sensitive to smoke impacts for health, safety, and/or aesthetic reasons. [1] • Smoke sensitive areas that are scenic and/or important views are identified by the APCD and provided to the signatories. [1] • The APCD may require additional information and permit conditions for projects that are proximate to population areas. [1] • Procedures for notification of smoke sensitive areas of burning date(s) for planned ignition projects are included in the applicant's prescribed burning management plan. [1] • Suppression action may be initiated if the APCD determines that the fire will affect smoke sensitive areas especially rural or urban population centers. [1]

Smoke Management Program Component	State
	Colorado
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The MOU identifies six objectives: (1) To minimize the generation and/or impacts of smoke when prescribed burning is necessary for the conduct of accepted range and forest practices, (2) To assure that the Colorado Ambient air Quality Standards are not exceeded., (3) To minimize visibility impacts from smoke in smoke sensitive areas, such as, important and scenic view including those in Class I areas, (4) To minimize the generation and/or impacts of smoke when prescribed burning is necessary to maintain the natural ecosystem, (5) To demonstrate compliance with applicable “conformity” requirements described in Federal law and regulations, as well as Colorado regulation, and (6) To maintain and improve a system to inventory emissions from prescribed fires and wildfires. [1]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • The burn boss for projects that have not met the performance standards, submit a written incident report to the APCD. The incident report includes specifics as to what happened, contributing factors, and recommendations for prevention of similar incidents in the future. Incident reports are reviewed by the MOU signatories to determine if changes to the MOU or the permitting process are indicated because of the incident or the incident report. [3]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Colorado Air Pollution Prevention and Control Act. (Act) § 25-7-11.3 allows APCD to investigate and take action on air pollution emergencies that endanger public welfare. This portion of the Act has not been used in recent history for any pollution source. All complaints or elevated particulate matter concentrations are investigated and appropriate actions taken. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Regulation #1, Section II.C. and the MOU are not part of the SIP. The long-term strategy portion of the Class I visibility SIP requires that smoke management be addressed. The MOU is a key component of Colorado’s smoke management program. Smoke management is one of the programs Colorado considers meet the long-term strategy requirements for preventing future impairment of visibility in any Class I area. [2]

Smoke Management Program Component	State
	Colorado
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> The current smoke management program is funded from the Air sources Account Fund and the Air Partnership Performance Grant, the vehicle for EPA grant funds. In the future it is anticipated the funding source will be shifted to fees assessed for prescribed fire projects. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> An annual inventory is maintained for prescribed fire projects covered by the MOU. A daily air pollutant emissions inventory can be reconstructed for projects that last a single day and projects with a smoke risk rating of high. Multiple day projects are reported as project total emissions. Emission calculations are based on post burn reports of acres burned, fuel type, estimated consumption and fuel loading. [2][3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> There is not a mechanism in place to calculate and record the air pollutant emission reductions achieved from efforts to minimize emissions. [2]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> Yes. After the MOU is renegotiated this year (2000), APCD will certify the SMP with EPA. Submittal of certification is expected in 2001. [3]

Source of summary information:

- [1] Boulder County Health Department Air Quality Program Open Burning Policy and Permit Forms. Effective Date June 1, 1998. Available at <http://www.co.boulder.co.us/health/enviro/openburn.htm>.
- [2] Forest Ecosystem Management Plan: Citizen's Guide. Available at <http://www.ci.boulder.co.us/openspace/Forest/forest.htm>
- [3] Greg Toll, City of Boulder Fire Department; personal communication with Barbara Bauer, EC/R Incorporated, on June 12, 2000.
- [4] City of Boulder - Fire & Rescue Department: Prescribed Fires: Where and When Available at <http://www.ci.boulder.co.us/fire/index.html>.
- [5] Forest and Fire Ecology - Prescribed Fire. Available at <http://www.ci.boulder.co.us/openspace/Forest/forest.htm>.
- [6] Boulder County Prescribed Fire Guideline, provided by Greg Toll, City of Boulder Fire Department.
- [7] Comments received from Bonnie Greenwood, Boulder County Health Department, on June 29, 2000.

Special Note:

- This survey was reviewed by the City of Boulder Fire Department and the Boulder County Health Department. For more information, contact Greg Toll, Boulder FD, 1805 33rd Street, Boulder, CO, 80301, or Bonnie Greenwood, Boulder County HD, 3450 Broadway, Boulder, CO, 80304.

Smoke Management Program Component	Boulder
	Colorado
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Boulder County Health Department (BCHD) has final authority for approving or denying an open burning permit. [1]• The BCHD, under the authority of the Colorado Dept. of Public Health and Environment, Air Pollution Control Division, regulates the open burning of any material in Boulder County. [1]• Under mutual agreement, delegation of authority is extended to BCHD from the Colorado Dept. of Public Health and Environment, Air Pollution Control Division for issuing and enforcing open burning permits and enforcement of state open burning policies. [1]

Smoke Management Program Component	Boulder
	Colorado
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The Open Space Department (OSD), the Mountain Parks Division of the Parks and Recreation Dept. and the Wildland Fire Division of the Fire Dept. are responsible for sustainably managing Boulder's forests for resource protection, visitor enjoyment and wildfire hazard management. To do so, they are jointly undertaking the preparation of a comprehensive Forest Ecosystem Management Plan. [2][5] • The City of Boulder Fire Dept. (FD), the OSD and the BCHD have an informal open burning working agreement. [3] • The BCHD submits copies of burn permits to the local fire jurisdictions the same day as the permit is issued. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Prescribed fire performed by the Boulder County/City of Boulder (under permit Form BC-02) requires a burn plan that must include a smoke management component that addresses actions: to minimize fire emissions, public notification and exposure reduction procedures, air quality monitoring and surveillance. [1] • A SMP is not required for a single burn activity at a single location or for winter open burning for hazardous fuel reduction (under the Open Burning Permit Form BC-01) but certain smoke reduction conditions must be met. [1] • Exempt sources (those sources that are exempt from having to obtain authorization and a signed open burning permit) are encouraged to notify the BCHD and their local fire dept. of the burn so that the agencies can respond to public inquiries and keep records. Exempt sources are also asked to fill out the General Information section of the Open Burning Permit (Form BC-01). Exempt sources are strongly encouraged to follow the air pollution alert or advisory restrictions. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The BCHD regulates all types of open burning including winter open burning for hazardous fuel reduction, single burn activity at a single location, and burns performed by the Boulder County/City of Boulder. Agricultural open burning is exempt from having to obtain authorization and a signed open burning permit. [1]

Smoke Management Program Component	Boulder
	Colorado
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • An open burning permit is required by any private individual, company, governmental agency, or other entity prior to conducting any open burning activity, except for agricultural, recreational and training fires. [1] • Open Burning Permit Form BC-01 should be used for any individual or company that requests an open burning permit for a single activity at a single location (permits are issued between March 1 and October 31 of each year) and for winter open burning for hazardous fuel reduction (permits are issued between October 31 and March 1 of each year). Open Burning Permit Form BC-02 should be completed by a county or city agency that requests a permit pursuant to planned/prescribed open burning of forests and range management projects. [1] • The Open Burning Permit Form BC-02 must be submitted with a burn plan and a Simple Approach Smoke Estimation Model (SASEM) output to the BCHD at least 3 days before the burn. [1] • BCHD will review the permit forms (and burn plan if required) and approve or disapprove the permit within the 3 days before the burn date. [1] • For broadcast burning for ecosystem management (i.e., control of noxious weeds, enhancement of native grasses) on non-agricultural private lands authorization from one of the following agencies is required: Cooperative Extension Service, Colorado State Forest Service or Natural Resource Conservation Service. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The burner must have authorization from BCHD (or other agency in the case of broadcast burning on private lands). Boulder County Communications and the BCHD must be contacted each day of the burn. If the burn falls on a weekend, the BCHD must be contacted on the following working day. [1] • Burners must comply with the air quality forecasts of red/blue days (November 1-March 31) and with the burn index (April 1-October 31) for that day. There is no burning allowed on red air quality days during the high pollution season (November 1-March 31). [1] • The local fire dept. must be notified prior to burning for fire safety concerns. [1] • Burning must be conducted during the time between two hours after sunrise and two hours before sunset. Under no circumstances is single activity at a single location burning allowed to continue overnight. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The City of Boulder Fire Dept. (FD), the OSD and the BCHD have an informal open burning working agreement. [3] • Boulder County and the City of Boulder must contact BCHD for a burning permit for all planned prescribed and/or broadcast burns. [1]

Smoke Management Program Component	Boulder
	Colorado
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • All permit requests are evaluated by BCHD in accordance with the following policy: “If a practical alternative method of disposal exists for any material being request to be open burned, then an open burning permit may be denied. In making such a determinations, it should be remembered that a practical alternative method of disposal does not have to be as convenient or as cost effective as open burning.” [1] • The smoke management component of the burn plan must provide reasoning for not using alternatives to fire. [6]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • For Boulder County/City of Boulder burn projects, the smoke management component of the burn plan should include actions to minimize fire emissions including actions to reduce residual smoke; mop-ups; reducing areas to be burned and fuel loading; and reducing fuel consumption and emissions. [1] • For Boulder County/City of Boulder burn projects, the smoke management component of the burn plan should include actions to reduce exposure to adverse impacts. These actions may include halting ignitions of any new open burning that could impact the same area; analyzing the fire situation and identifying alternative management responses upon becoming aware that a fire is out of air quality prescription; identifying appropriate, short-term fire management responses to abate smoke impacts; and implementing management responses that will mitigate adverse impacts [1] • For single activity at a single location burns the following actions to minimize emissions are required: materials to be burned should include only clean dry slash (branches 3" or less in diameter); burning must be conducted during the time between two hours after sunrise and two hours before sunset and under no circumstances is open burning allowed to continue overnight. [1] • For winter open burning for hazardous fuel reduction the following actions to minimize emissions are required: the project must be at an elevation of 6,400 feet or higher; material to be burned should be clean, dry slash, no stumps, trunks or logs; burning can occur only between 10 AM and 4 PM on “Blue Days” (good air quality days). [1][7]

Smoke Management Program Component	Boulder
	Colorado
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The actions to minimize fire emissions, including actions to reduce residual smoke; mop-ups; reducing areas to be burned and fuel loading; and reducing fuel consumption and emissions, must be documented in the smoke management component of the burn plan. [1][6] • The air quality and visibility impact component of the burn plan should include an estimate of emissions projections based on estimates of acres burned, pre-burn fuel loading by vegetation type and % consumption; actions that will be taken if the receptor is negatively impacted by smoke; a description of the planned measures to reduce smoke impacts; identification of the potential for smoke intrusions into sensitive areas and modeling air quality and visibility impacts via SASEM; and a description of ambient air monitoring plans. [6] • The steps taken to mitigate adverse impacts to the public must be reported to the BCHD in the post-burn report. [1]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Prescribed fire burn plans are required for all Boulder County/City prescribed fires. The plan must contain a smoke management component. [1][6] • The burn plan must contain the following components: General Information component, Air Quality and Visibility Impact component, and a Smoke Management component. [6] • The General Information component of the burn plan must contain location and description of the area to be burned; personnel responsible for managing the fire; type of vegetation/fuel to be burned (% of total acreage burned); area (acres) to be burned; percent consumption, fuel loading (tones/acres); fire prescription; criteria the fire manager will use for making burn/no burn decisions; safety and contingency plans addressing smoke intrusions. [6] • The Air Quality and Visibility Impact component of the burn plan must contain an estimate emission projection based on estimates of acres burned, pre-burn fuel loading by vegetation type and % consumption; identification of smoke-sensitive receptors and what actions will be taken if the receptor is negatively impacted by smoke; description of the planned measures to reduce smoke impacts; identification of potential for smoke intrusion into sensitive areas and modeling air quality and visibility impacts vis SASEM; and a description of ambient air monitoring plans. [6] • The Smoke Management component of the burn plan must contain actions to minimize fire emissions; evaluation of smoke dispersion; public notification and exposure reduction procedures; air quality monitoring; and surveillance. [6]

Smoke Management Program Component	Boulder
	Colorado
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • The smoke management component of the burn plan must evaluate smoke dispersion and must include information regarding smoke impacts at sensitive receptors; distance and direction from the burn site to local sensitive receptor areas; and requirements for the atmospheric capacity for smoke dispersal (minimum surface and upper level wind speeds, desired wind direction, minimum mixing height, and dispersion index). [6] • The Air Quality and Visibility Impact component of the burn plan must contain an estimate emission projection based on estimates of acres burned, pre-burn fuel loading by vegetation type and % consumption; identification of smoke-sensitive receptors and what actions will be taken if the receptor is negatively impacted by smoke; description of the planned measures to reduce smoke impacts; identification of potential for smoke intrusion into sensitive areas and modeling air quality and visibility impacts via SASEM; and a description of ambient air monitoring plans. [6] • In part, the BCHD bases the approval of permits on the potential contribution of the burn to air pollution in the burn area. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Extensive information on upcoming prescribed burns is available to the public on the Internet. [4] • Homeowners in close vicinity of prescribed burns receive leaflets with detailed information and open house meetings are offered for the larger burns. Municipal Channel 8 broadcasts information the day of the burns and Boulder/Denver area media are notified. A Boulder FYI phone number is established for burn day information at 303-441-4060, ext. 549. [4] • Press releases are issued announcing prescribed burns and giving contact names and phone numbers. The press releases are available at http://www.ci.boulder.co.us/fire/wildfire/press.htm. • The smoke management component of the burn plan requires notification of the affected public (especially sensitive populations) of elevated pollutant concentrations; suggest actions to be taken by sensitive persons to minimize their exposure (e.g., remain indoors, avoid vigorous activity, avoid exposure to tobacco smoke and other respiratory irritants); and provide clean-air facilities, if available, for sensitive persons. [6]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • The prescribed fire burn plan must contain safety and contingency plans to address smoke intrusions. [1]

Smoke Management Program Component	Boulder
	Colorado
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The smoke management component of the burn plan must contain information on air quality monitoring. The monitoring actions may include visual monitoring of the direction of the smoke plume; monitoring nuisance complaints by the public; posting personnel on vulnerable roadways to look for visibility impairment and initiate safety measures for motorists; using aircraft to tract the progress of smoke plumes; and locating real-time PM monitors. [6] • Within the City of Boulder, there are Federal reference monitors (one PM10 and one PM2.5). The Colorado Department of Public Health and Environment checks the data during periods of fire activity. [7]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • General information on prescribed fire and upcoming prescribed burns is available to the public on the Internet. The public can also learn about the reasons for burning, efforts to mitigate smoke and the benefits and undesirable aspects that a homeowner can expect. [4] • The OSD provides information on open space prescribed fires. The information is available at http://www.ci.boulder.co.us/openspace/fire/presburn.htm. • The City of Boulder Forest Ecosystem Management Plan: Citizen's Guide is available to the public on the Internet. It describes Boulder's forests (past and present), the goals of the Forest Ecosystem Management Plan, new approaches to land management, a stand prescription example and a forest plan map. [2] • The BCHD's "Open Burning and Fire Safety in Boulder County" brochure is available through the Health Department and public forums. [7]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Open burning without a permit will be documented by the BCHD and, depending on the severity of the problem, either a warning letter or Notice of Violations will be issued. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Violations of the open burning permit requirements are subject to a penalty the size of which is dependent upon whether the burning is commercial or non-commercial. If the violation is found to be non-commercial, a civil penalty of not more than \$100 per day for each day during which the violation occurs may be assessed. If the violation is found to be commercial, a civil penalty of not more than \$10,000 per day for each day which the violation occurs may be assessed. [1] • If any person violates a compliance order issued for an open burning violation, then the violation can be addressed with a civil penalty of up to \$15,000/day. [1]

Smoke Management Program Component	Boulder
	Colorado
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Post-burn reports are required for prescribed fires. The Open Burning Permit Form BC-02 requires the reporting of actual fire activity. The form requests information on acres burned, fuel loading (tones/acres), type of fuel (% of total acreage), percent consumption. [6] • Post-burn reports for fires that impact sensitive receptors are required. The report must contain a description of the incident that lead to excessive smoke, description of how the contingency plan was implemented (including all aspects of the plan whether they were implemented or not) and recommendations of actions to prevent future smoke related problems. [6]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Information not provided.
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.
Optional Air Quality Protection	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The Open Burning Permit Form BC-02 defines smoke sensitive areas as: Class I areas as well as other scenic and important views, urban and rural population centers, hospitals, nursing homes, schools, transportation/facilities such as roads, highways, and airports, recreational areas, and other locations that may be sensitive to smoke impacts for health, safety, and/or aesthetic reasons. The form asks the burner to list the smoke sensitive areas, and describe how far the area is from the burn (miles) and the direction of the area from the burn (degrees). [1] • Burners must notify sensitive populations of elevated pollutant concentrations. [1] • The smoke management component of the burn plan must suggest actions to be taken by sensitive persons to minimize their exposure and provide clean-air facilities (if available) for sensitive persons. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Information not provided.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	Boulder
	Colorado
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • State nuisance laws do apply to smoke from prescribed fires (from Colorado Revised Statutes 16-13-302 & 25-1-506 which give local health departments authority to abate public nuisances and to protect public health). These are the criteria used for determining whether it will be pursued: 1. Is the nuisance occasional or constant? 2. Is the use of the property affected? 3. What are the economic impacts? 4. Is the location of the nuisance residential, industrial or rural? 5. Number of people affected/number of complaints received. 6. Has the nuisance been mitigated to the extent practicable? 7. Is public health threatened? [7]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Information not provided.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • The BCHD has an annual air contract with the Colorado Department of Public Health and Environment for funds to issue permits and perform enforcement activities in Boulder county. [7]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The Open Burning Permit Form BC-02 requires the reporting of actual fire activity (post-burn report). The form requests information on acres burned, fuel loading (tones/acres), type of fuel (% of total acreage), percent consumption. The information contained in the form is used for an emission inventory. [6]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	Boulder
	Colorado
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Information not provided.

Source of summary information:

- [1] El Paso County Department of Health and Environment Air Quality Regulations. Effective May 1, 1995
- [2] Personal communication between John James (El Paso County Health Department, 719-578-3139) and Barbara Bauer (EC/R Incorporated, 919-933-9501) on July 7, 2000.
- [3] Comments provided by the Colorado Department of Public Health and Environment and reviewed by the EL Paso County Department of Health and Environment; comments received on September 20, 2000.

Special Note:

- This survey was reviewed by the El Paso County Health Department and the Colorado Department of Health. For more information, contact John James, El Paso County HD, 301 South Union Blvd., Colorado Springs, CO, 80910, or Coleen Campbell, CDH, 4300 Cherry Creek Drive South, APCD-B1, Denver, CO, 80246.

Smoke Management Program Component	El Paso County/Colorado Springs
	Colorado
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • All open burning requires a permit from the El Paso County Department of Health and Environment (DHE), Air Quality Control Program. [1] • DHE has delegated authority from the Colorado Department of Public Health and Environment, Air Pollution Control Division to issue open burning permits in El Paso County. [3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • A DHE permit is not required if the burner has a permit from the Colorado Dept. of Health, Air Pollution Control Division for the same activity. [1] • For the burning of trees or shrubs suspected of disease or pest infestation, proper verification from the County Pest Control Officer is required before a permit is issued. [1] • The DHE has no formal agreements with Federal, State or local agencies. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Section 2 of the Regulation discusses the requirement to apply selected reasonable available control measures to reduce fugitive particulate emissions from the activities discussed in the Regulation. [1]

Smoke Management Program Component	El Paso County/Colorado Springs
	Colorado
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The permit program covers all open burning including agricultural and wildland burning. [1][2]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • A burn permit must be obtained from the DHE. A DHE permit is not required if the burner has a permit from the Colorado Dept. of Health, Air Pollution Control Division for the same activity. [1] • For the burning of trees or shrubs suspected of disease or pest infestation, proper verification from the County Pest Control Officer is required before a permit is issued. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The burner must have a valid permit from the DHE or the Colorado Dept. of Health, Air Pollution Control Division. [1] • Section 10 of the Regulation states that no activity covered by the regulation can commence without first obtaining an approved Emission Control Plan. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The DHE has no formal agreements with Federal, State or local agencies. [2]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Information not provided.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Section 2 of the Regulation notes the requirement to apply selected reasonable available control measures to reduce fugitive particulate emissions from the activities discussed in the Regulation. [1] • The permit program prohibits wildfire burning during the period of November through March. [2]

Smoke Management Program Component	El Paso County/Colorado Springs
	Colorado
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Information not provided.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Section 10 of the Regulation states that no activity covered by the regulation can commence without first obtaining an approved Emission Control Plan. No other information is provided. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • Information not provided.
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Information not provided.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Information not provided.
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	El Paso County/Colorado Springs
	Colorado
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Information not provided.
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The DHE will make a prompt investigation if a complaint is filed and may issue a notice of violation and order to comply. If the DHE determines that noncompliance or a violation was continued after receipt of a notice and order to comply, the DHE can take further action. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • The DHE may bring suit for an injunction to prevent any further or continued violation of the Regulations. Civil penalties can be imposed which will not exceed \$500 for each violation. Each day of violation is considered a separate violation. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • No. [3]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Information not provided.
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	El Paso County/Colorado Springs
	Colorado
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Information not provided.
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Information not provided.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The City of Colorado Springs has a nuisance ordinance which prohibits all open burning in the city limits. [2] • Colorado Air Pollution Prevention and Control Act. (Act) § 25-7-11.3 allows DHE (as a designee of the Colorado Department of Public Health and Environment, Air Pollution Control Division) to investigate and take action on air pollution emergencies that endanger public welfare. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • No. [3]

Smoke Management Program Component	El Paso County/Colorado Springs
	Colorado
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • A \$20 fee is charged for an open burning permit. [1]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Not required. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Not at this time. [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Not at this time. [3]

Source of summary information:

- [1] 2000 Florida's Forest Fire Laws and Open Burning Regulations [Florida Administrative Code (Excerpted)], Chapter 590 Forest Protection, Chapter 823 Public Nuisance, Chapter 877 Miscellaneous Crimes, Chapter 403 Environmental Control, Chapter 5I-2 Open Burning Rule, and Chapter 62-256 Open Burning and Frost Protection Fires.
- [2] Personal communication between K. Woodard, EPA/OAQPS and J. Brenner, Florida DOACS.
- [3] Comments received from Florida Department of Agriculture & Consumer Services, Division of Forestry, Forest Protection Bureau dated August 24, 1999.
- [4] Comments received from Florida Department of Agriculture & Consumer Services, Division of Forestry, dated October 4, 2000.

Special Note:

- This survey was reviewed by the Florida Division of Forestry. For more information, contact Jim Brenner, FL DOF, Fire Management, 3125 Conner Boulevard, Tallahassee, FL, 32399.

Smoke Management Program Component	State
	Florida
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Division of Forestry (DOF) oversees and authorizes general open burning and open burning for Certified Prescribed Burn Managers. [1] • The DOF oversees authorizations for all burning (Certified or Not) for Agriculture, Silviculture and Land Clearing activities - all burns do not have to be conducted under the Certification program. [4]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The DOF coordinates with the Department of Environmental Protection (DEP) to prohibit open burning during an air stagnation advisory, or a DEP air pollution episode. [1] • The Commissioner of Agriculture may declare a drought emergency, then the Governor may issue a proclamation declaring a drought emergency and making open burning unlawful. [1][4] • The DOF has delegated its authority to authorize burns to several counties in the State. [2] • Local governing bodies determine the training and qualifications of their employees to enforce the State regulations. [1] • Agreements have been reached with Federal land management agencies and large private and commercial land owners on prescribed fire procedures. [2]

Smoke Management Program Component	State
	Florida
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Yes, all land owners must get authorization to conduct prescribed burns. Non-certified burners must maintain control of their fire and smoke impacts, and are liable for the impacts that result from the fire. Certified burners agree to meet additional requirements for which they are protected from civil liability unless gross negligence is proven. [2][4]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • Open burning in general is carried out for agricultural, silvicultural, and rural land clearing purposes. [1] • Open burning by Certified Prescribed Burn Managers is carried out for silvicultural, wildlife management, ecological maintenance and restoration, and range management purposes (including pasture). [1][4]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • For open burning in general, authorization must be received from the DOF prior to igniting the burn on the day that the burn is to take place, or after 4 p.m. of the previous evening. [1] • The Certified Prescribed Burn Manager must submit their certificate number at the time of the request. [1] (Non-certified burners are not required to do this. [2])
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Authorization must be received on the day of the burn, prior to igniting the fire. [1] • Sufficient personnel must be on site to manage the fire while the burn is being conducted. [2] • For certified prescribed burns, prescriptions for prescribed broadcast burning must be on site throughout the entire burn and available for inspection by a DOF representative; this requirement does not apply to non-certified burns. [1][4] • The burn may not leave the authorized area. The burner's property is not necessarily the authorized area. For example, if the burner gets an authorization for 50 acres and burns 500, he/she is in violation regardless of whether the burn left his/her property. [4] • The daytime authorizations are from 9:00 am to one hour before sunset for non-certified burners and one hour after sunset for certified prescribed burn managers. Nighttime authorizations are good until 9:00 am the following day provided that the burn does not create a problem. [4]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Yes, operating agreements have been established between the DOF and large private, commercial, and public land managers. • Certification to become a Certified Prescribed Burn Manager is accomplished by: 1) satisfactory completion of the DOF's Prescribed Fire Correspondence Course and direct experience in three prescribed burns prior to taking the course or; 2) satisfactory completion of the Florida Inter-Agency Basic Prescribed Fire Course and direct experience in three prescribed burns before or after the completion of the course. [1][4]

Continued on next page

Smoke Management Program Component	State
	Florida
7. <i>Continued</i>	<ul style="list-style-type: none"> • In order to renew certification, Certified Prescribed Burn Managers must 1) participate in a minimum of eight hours of prescribed fire training every five years, and 2) submit their certification number for two completed prescribed burns in the preceding five years, or 3) have participated in five burns and had it documented and verified by a current Certified Prescribed Burn Manager, or 4) retake either the Prescribed Fire Correspondence Course or the Inter-Agency Basic Prescribed Fire Course. [1]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The regulations do not discuss alternatives to fire as a land management tool or reductions in emissions. [1] • Strong emphasis placed on mechanisms in areas in urban areas. [2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Any authorized general open burn that goes out of compliance will be allowed a maximum of two hours to be brought into compliance by the person responsible. In the event that the DOF determines that there is a threat to life, public safety or property immediate suppression action will be taken. [1] • For pile or windrow burning in smoke sensitive areas, flames must be extinguished one hour before sunset. The amount of dirt in the piles or rows must be minimized to enhance combustion and reduce emissions. [1] • A Certified Prescribed Burn Manager's burn prescription must contain an evaluation and approval of the anticipated impact of the proposed burn on related smoke sensitive areas. [1] • Open burning in particulate and ozone nonattainment areas may be temporarily suspended when the DEP determines that ambient air concentrations of total suspended particulate or ozone may near or exceed the primary or secondary standards for these pollutants. [1] • No open burning may be conducted during a National Weather Service Air Stagnation Advisory, a DEP Air Stagnation Advisory, an Air Pollution Episode, or if the DOF determines that weather conditions are unfavorable for safe burning. [1] • All certified prescribed burn managers must complete a smoke screening plan for every burn they do in accordance with their training. [4]

Smoke Management Program Component	State
	Florida
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • For certified burners, yes; no, for others. [2]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Burn plans are recommended, but are required only under the Certified Prescribed Burn Manager program. [2] • The Certified Prescribed Burn Manager's burn prescription must include the following: (1) Stand or site description, (2) Map of the area to be burned, (3) Personnel and equipment to be used on the burn, (4) Desired weather factors, including surface wind speed and direction, transport wind speed and direction, minimum mixing height, minimum relative humidity, maximum temperature, and fine fuel moisture, (5) Desired fire behavior factors, such as type of burn technique, flame length, and rate of spread, (6) The time and date the prescription was prepared, (7) The authorization date and the time period of authorization, (8) An evaluation and approval of the anticipated impact of the proposed burn on related smoke sensitive areas, and (9) The signature of the Certified Prescribed Burn Manager. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • A Certified Prescribed Burn Manager's burn prescription must contain an evaluation and approval of the anticipated impact of the proposed burn on related smoke sensitive areas. [1] • The impact of the burn is evaluated by following procedures in "Prescribed Fire in Southern Forests." [2] • The following types of open burning are not allowed in Florida: open burning that reduces visibility at a public airport; open burning which reduces visibility on public roadways to less than 1000 feet unless the regulating authorities have given their permission to control traffic; and burning in smoke sensitive areas between one hour before sunset and 9:00 A.M. the next day. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • DOF policy is to notify the public of planned prescribed burns, but notification is not required by statute. [2] • The DOF may prescribe burn any area of wildland within the state which is reasonably determined to be in danger of wildfire in accordance with several procedures including the publishing of a prescribed burn notice, including a description of the area to be burned, in a conspicuous manner in at least one newspaper of general circulation in the area of the burn not less than 10 days before the burn. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • The regulations do not specify whether contingency plans to reduce exposure to smoke are required. [1] • The DOF will suspend any open burning authorization and require burns in progress to be extinguished whenever atmospheric or meteorological conditions indicate improper dispersion of pollutants. Any burn in progress will be allotted two hours to reduce emission to a level that no longer threatens public health or safety. [2]

Smoke Management Program Component	State
	Florida
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The land owner/burn manager is responsible, and must monitor the fire, for smoke impacts on sensitive receptors such as roads, airports, homes, etc. The DOF has an agreement with the DEP to monitor and report air quality problems caused by prescribed fires. [2]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The Department of Education must incorporate, where feasible and appropriate, the issues of prescribed burning into its educational materials. [1] • The role of fire in Florida ecosystems is taught in schools, and the DOF has educational materials on the Internet. [2]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • For general open burning, the DOF may set special requirements for authorizations in order to protect public safety, including but not limited to on site inspections. [1] • For a prescribed open burn, the Certified Prescribed Burn Manager's prescription for the burn must be on site and available for inspection by a DOF representative. [1] • The DOF has enforcement personnel to respond to complaints and issue notices of violations when appropriate. [2]

Smoke Management Program Component	State
	Florida
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> Any person violating any of the provision of the State regulations is liable for all damages caused by the violation. [1] Anyone who willfully or intentionally violates the State regulations are subject to felony punishment. Anyone who carelessly violates the State regulations are subject to misdemeanor punishment. [1] Anyone who causes unauthorized fire or lets a fire escape is liable for the payment of all reasonable costs and expenses incurred while suppressing the fire. [1] An administrative fine, not to exceed \$1,000 may be imposed. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> Information not provided.
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> The regulations do not include provision to periodically review program effectiveness. [1] Florida laws are routinely reviewed as issues are raised by the public and regulated community. [2]
21. What are the review criteria?	<ul style="list-style-type: none"> The regulations are reviewed based on issues raised by the public and regulated community. [2]
Optional Air Quality Protection	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<p>The only “special protection zones” are the following smoke sensitive receptors:</p> <ul style="list-style-type: none"> The regulations prohibit open burning that reduces visibility at a public airport or on public roadways. [1] Open burning in particulate and ozone nonattainment areas or in the area of influence may be temporarily suspended if the DOF determines that total suspended particulate or ozone may near or exceed the primary or secondary standards for these pollutants. [1] Pile/windrow burning must be set back 300 ft. from any occupied building except the landowner’s buildings. [1] The DOF won’t issue authorization if sensitive areas are likely to be impacted. [2]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> Information not provided.

Smoke Management Program Component	State
	Florida
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Nuisance regulations apply to non-certified burning. If a complaint is made, a DOF representative is required (internal policy) to do an on-site inspection so that we can determine if there is a need to shutdown the burn and issue restrictions for future burning on the site. Certified Burners can not be shutdown for nuisance complaints, they can however, be shutdown for a threat to health or safety. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Yes, the rules and regulations in both Florida Statute 590 and Florida Administrative Code 5I-2 are part of the SIP as far as I know, unless there have been some recent changes that I am not aware of at this time. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • The program is funded by the state's general revenue program; Florida does not charge a fee for the authorization program. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The Florida DOF has information concerning fuel types and acres burned for each authorization that could be used to approximate an emissions inventory. This is not currently procedure in Florida, but with the information available to us, it easily could become policy if the information served some useful purpose. In light of the fact that Florida currently does not have any non-attainment areas, we have not felt this to be a critical need. [3]

Smoke Management Program Component	State
	Florida
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No, we do not have a process, but based on the information available to us, we could produce an estimate of what the emissions would have been. However, the alternative methods (chemical/mechanical) are not currently inventoried. [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Information not provided.

Source of summary information:

- [1] Metro-Dade Fire Department Policy & Procedure Manual - Open Burning/bonfires Regulations and Operating Procedures. September 28, 1998.
- [2] Comments received from Ray Gordon (Metropolitan Dade County Department of Environmental Resources Management) on June 28, 2000.
- [3] Comments received from Ray Gordon (Metropolitan Dade County Department of Environmental Resources Management) on October 13, 2000.

Special Note:

- This survey was reviewed by the Department of Environmental Resources Management for Metropolitan Dade County. For more information, contact Ray Gordon, DERM Dade County, 33 S.W. 2nd Avenue, Miami, FL, 33130-1540.

Smoke Management Program Component	Dade County
	Florida
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Fire Suppression Unit of the Metro-Dade Fire Department Operations Division permit or deny burning based on an on-site survey and conditions contained in the application. [1]
2. Regional Coordination - With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • Several Divisions and one Unit within the Metro-Dade Fire Dept. coordinate to regulate opening burning in the County. The divisions are the Fire Prevention Division (FPD), the Operations Division (OD) and the Fire Communications Division (FCD). The unit is the Suppression Unit (SU) of the Operations Division. [1] • The FCD notifies the Florida Division of Forestry (DOF) of any burn permit issued west of Krome Avenue. [1] • The Dept. of Environmental Resources Management Pollution Control Inspectors (PCI) and the DOF inspect open burning by spot checking or upon request. [1] • The PCI, the DOF, and the Miami-Dade Police Dept. have the authority to enforce certain state and local regulations related to open burning. [1] • The DOF is the local agency that ensures that all prescription burning meets adopted minimum state requirements. The Miami-Dade County Fire Rescue Dept. will assist the DOF when requested. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any	<ul style="list-style-type: none"> • The available information does not specifically discuss a smoke management program. However, a permit is required for all open burning in Miami-Dade County. [1]

Smoke Management Program Component	Dade County
	Florida
requirements for burners not covered under the SMP?	
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> The manual covers burning related to silviculture burning (the phase of forestry dealing with the establishment, development, reproduction, and care of forest flora and fauna), in-situ burning (the burning of above ground polyethylene mulch plastic which is burned in place, one layer thick), land clearing burning (burning of debris that is generated by commercial land clearing activities), prescribed burning (the controlled application of fire to naturally occurring vegetation fuels under specified environmental conditions and following appropriate precautionary measures) and broadcast burning (any silvicultural or agricultural or land clearing burning of vegetative material, originating on site, that has not been placed in piles). [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> The burner must complete a permit application and sign an affidavit prior to a FPD inspection stating that all policy requirements have been met. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> The FPD must conduct a technical inspection and issue an approved burn permit. [1] The burner must call the FC office after 9 a.m. each day that burning is planned, to obtain permission to burn for that day. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> There is an agreement between the land managers and the Fire Department. [3] There are no requirements in place for burner qualification and no training for smoke management. [3]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> Other methods have been considered but they all proved to be too costly. [3]

Smoke Management Program Component	Dade County
	Florida
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The fire must be ignited after 9 a.m. and completely extinguished one hour before sunset. [1] • The burner is required to take all reasonable precautions to control excessive visible emissions and odors from an open burn. [1] • The burner must have water available. [2] • Size restrictions and number of piles to be burned may be limited. [1] • For land clearing burns, the fire must be 200 feet or more away from any occupied building and 100 feet from a public highway. [1] • For in-situ burns, a setback distance of 300 feet or more away from any occupied building and 100 feet or more from public roads is required and burning will only take place when wind direction will not adversely affect road visibility or downwind occupancies. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Actions taken to minimize emissions are documented in a “Burn plan” [3]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Yes. They must include the date and time of the burn, the weather conditions, wind direction etc. [3]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the National Visibility Goal?	<ul style="list-style-type: none"> • Smoke dispersion conditions are not evaluated. [3]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Yes. [3]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Yes. [3]

Smoke Management Program Component	Dade County
	Florida
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • There is no monitoring. [3]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Yes. [3]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The PCI and the DOF inspect open burning by spot checking. [1] • A fire inspector/investigator is dispatched when open burning complaints are received. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • If the burner does not have a permit or is in violation of permit conditions or a nuisance is created, the PCI and the DOF will request the fire department to extinguish the fire and take enforcement actions. [1] • The fire inspector/investigator, after conducting an investigation, will determine if a citation will be issued. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Post-burn reports are not required. [3]

Smoke Management Program Component	Dade County
	Florida
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • It is the responsibility of the appropriate Metro-Dade Assistant Chief/Director to review and update the open burning policy. [1]
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Although the manual does not specifically discuss special protection zones, there are requirements for burning near occupied buildings and public roadways. See question 9 for the requirements. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • There are no specific performance standards as long as the criteria set by the fire department are met. [3]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Not applicable. [3]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • No. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • No. [3]

Smoke Management Program Component	Dade County
	Florida
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Inspection fees are paid to the Fire Rescue Dept. before a permit is issued. Inspections that do not meet established requirements will result in the denial of a permit without refund. [1] • A check must be submitted with all permit applications to the FPD. A fee of \$75 is charged for a 30-day single site burn permit. For a multiple-site annual burn permit, a fee of \$250 is charged for 1-500 aggregate acres and \$350 for more than 501 aggregate acres. [1]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Daily air monitoring data is maintained for the county, but it is not specific to emissions from prescribed burning. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No. [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Information not provided.

Source of summary information:

- [1] Rules of the Environmental Protection Commission of Hillsborough County, Chapter 1-4 - Open Burning.
- [2] Environmental Protection Commission Open Burning. Available at http://www.epchc.org/new_page_3.htm.
- [3] Mike Perry, FL Department of Agriculture and Consumer Services; personal communication with Barbara Bauer, EC/R Incorporated, on June 20, 2000.
- [4] Comments received from Hillsborough, FL DOACS on August 3, 2000.
- [5] Comments received from Mike Perry, FL Department of Agriculture and Consumer Services, on October 16, 2000.

Special Note:

- This survey was reviewed by the Department of Agriculture and Consumer Services of Hillsborough County. For more information, contact Michael Perry, DACS Hillsborough County, Tallahassee, FL, 32399-0800.

Smoke Management Program Component	Hillsborough County
	Florida
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Environmental Protection Commission of Hillsborough County (EPC) issues authorizations for all land clearing open burning operations prior to commercial development. [2] • The Division of Forestry (DOF) controls and authorizes open burning for the maintenance and initial clearing of agricultural land. [2] • The Tampa Fire Dept. (TFD) issues permits authorizing burning within the city limits of Tampa. [2]
2. Regional Coordination - With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • A multi-lateral agreement exists among Hillsborough County, the EPC, the DOF, and local fire departments that lays out each entities responsibility. [3][4]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The available information does not specifically discuss a smoke management program; however, burners have certain requirements to minimize the amount and impact of smoke as discussed below. [1][2]

Smoke Management Program Component	Hillsborough County
	Florida
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The rule discusses land clearing operation burning (the initial uprooting or clearing of vegetation in connection with construction for buildings, rights-of-way, residential, commercial, or industrial development, mineral operations, roads, flood control and water drainage channels, or initial clearing of agricultural lands, and does not include maintenance clearing of yard trash); agricultural open burning (open burning for range improvement, maintenance and continuation of the grazing of animals or burning incidental to other continuous agricultural activities, and initial agricultural land clearing but excluding other land clearing operations); and open burning for the purpose of habitat or ecosystem management. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • For land clearing operation burning, the burner must submit an application for open burning along with a fee of \$425 to the EPC. Once granted, the authorization normally lasts for 30 days with a possibility of a one time 15 day extension. [2] • For agricultural open burning, the burner must obtain a permit and receive authorization from the DOF. Burners must provide the following information: name, number, location and date(s) of burning. [2] • For burning within the city limits of Tampa, all burners must obtain a permit from the TFD prior to their requesting an EPC authorization. [2] • Open burning for the purpose of habitat or ecosystem management requires authorization by appropriate public officials acting in accordance with state or local regulation. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • For land clearing operations burning the following applies: burning must occur between 9 AM and be completely extinguished one hour before sunset; burning must be conducted so as not to cause a threat to health, safety or cause a nuisance; burn sites must be under constant physical supervision; materials to be burned must consist only of vegetation from the land that is being cleared; burning must not occur within 1,000 feet of any active runway or public airport; the burn site must be away from overhanging trees, underbrush or other combustible material; and material to be burned must be dry and burned without the use combustible materials. [2] • For maintenance and initial clearing of agricultural land burns the following applies: only natural vegetation can be burned; burning must be at least 1,000 feet from any occupied building (setback requirement) and 100 feet from any public road; the burning should not cause a nuisance, excessive smoke, odor or smoldering; and piles should be limited in number so they can be controlled and means of extinguishing the fire should be on-site. [2]

Smoke Management Program Component	Hillsborough County
	Florida
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • A multi-lateral agreement exists among Hillsborough County, the EPC, the DOF, and local fire departments. [3]

Smoke Management Program Component	Hillsborough County
	Florida
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Property owners are encouraged to recycle, compost and utilize the local waste hauler and the County's yard and wood waste processing facility. [2] • "Alternatives to Open Burning" publication is available through the EPC. [2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Allowed open burning may be temporarily suspended when the EPC determines that ambient air concentrations of particulate matter or ozone may near or exceed the primary or secondary standards for these pollutants. [1] • No open burning is conducted during a National Weather Service Air Stagnation Advisory, a Florida Dept. of Environmental Protection Air Stagnation Advisory or Air Pollution Episode, or if the appropriate authorities determine that weather conditions are unfavorable for proper open burning. [1] • The EPC Director may prescribe special conditions or limitations as deemed necessary to minimize adverse effects before issuing authorization to burn. [1] • The moisture content and composition of the materials to be burned must be favorable to good burning. Newly cut vegetative material must be dry prior to being burned. [1] • Piles of materials to be burned must be of such a size that the burning will be completed within designated hours and restrictions on the size and number of piles may be imposed. [1] • The amount of dirt in a land clearing open burning operations must be minimized to enhance combustion and reduce emissions. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • No (only for agricultural burning according to 590.125, FS). [5]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Only as required for agricultural burning by FS 590.125, part 2 & 3. [5]

Smoke Management Program Component	Hillsborough County
	Florida
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the National Visibility Goal?	<ul style="list-style-type: none"> • The burner must consider the effect of wind to minimize the chance that smoke and soot may cause a hazard or nuisance to residences and vehicular traffic. [2] • Burn sites must be under constant physical supervision of a competent person who has the means available to quickly extinguish the fire. [2]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • To receive an exception to the setback requirements from the EPC, the burner must provide at least 15 days written notice of the proposed waiver to all registered Neighborhood Organizations within 1 mile of the proposed burn site. The burner must also obtain signed affidavits from affected residents within the setback area waiving all objections to the open burning associated with the land clearing operation. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Although the available information does not specifically discuss contingency plans, burn sites must be under constant physical supervision of a competent person who has the means available to quickly extinguish the fire. [2]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The available information does not specifically discuss if the air quality impacts of fires must be monitored; however, allowed open burning may be temporarily suspended when the EPC determines that ambient air concentrations of particulate matter or ozone may near or exceed the primary or secondary standards for these pollutants. [1]

Smoke Management Program Component	Hillsborough County
	Florida
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Information on open burning and the County's Open Burning Rule is available to the public through the Internet. [2] • The EPC Open Burning web site encourages citizens to call EPC's Air Management Division for additional information on open burning. The web site also states that "Public awareness and involvement in restoring and improving our environment is essential." [2]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The written authorization to burn must be prominently posted on-site during the period of open burning. [1] • The EPC investigates all open burning complaints and the DOF investigates all complaints involving open burning for agricultural purposes. [1][2]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Any person responsible for unlawful open burning bears any applicable costs involved in extinguishing the fire. [1] • If violations of the regulations are noted, enforcement action may be initiated by the EPC against the owner and/or occupants of the property . If substantiated, violations may lead to possible penalties of up to \$5,000 per violation per day, plus expenses incurred in investigating and resolving the violation. [2]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • No. [5]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • An annual review evaluates the effectiveness and allows for changes as needed. [4]
21. What are the review criteria?	<ul style="list-style-type: none"> • Needed changes are based on complaints from the public and/or random compliance inspections. [4]

Smoke Management Program Component	Hillsborough County
	Florida
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> Although the available information does not specifically discuss special protection zones, open burning is prohibited within 1,000 feet of any occupied building and active runway or a Dept. of Transportation approved public airport, and within 100 feet of any public road or highway. [2] The burner must consider the effect of wind to minimize the chance that smoke and soot may cause a hazard or nuisance to residences and vehicular traffic. [2] In addition, the DOF designates “smoke sensitive” areas, e.g., schools, hospitals, highways, etc., to facilitate issuing burn authorizations. [4]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> No. [5]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> On site inspections are mandatory after a violation has occurred and additional conditions, e.g., greater setbacks, specific wind directions can be imposed to meet the standards. [4]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> Yes, State and local regulations apply to prescribed fire. [4] Open burning must not produce excessive or unnecessary smoke, soot, odors, visible emission, heat, flame, or radiation so as to cause a nuisance or violate the County’s Open Burning rule. [1]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> Unknown. [5]

Smoke Management Program Component	Hillsborough County
	Florida
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Smoke management program operations, for agriculture/silviculture, are absorbed by the local district operating budget. [4] • A fee of \$425 must be submitted to the EPC before authorization to burn for land clearing operations is issued. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • No. [5]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No. [5]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Unknown. [5]

Source of summary information:

- [1] Hawaii Revised Statutes, Chapter 185, Land Fire Protection Law.
- [2] Operational Policy Handbook for Wildland Fire Control.
- [3] Earl Pawn, Hawaii DLNR; personal communication with G. MacDonald, EC/R on June 1, 2000.
- [4] Comments received from Wayne Ching, State Fire Protection Officer, on October 2, 2000.

Special Note:

- This survey was reviewed by the State Fire Protection Officer. For more information, contact Wayne Ching, State Fire Protection Officer, 1151 Punchbowl Street, Honolulu, Hawaii, 96813.

Smoke Management Program Component	State
	Hawaii
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Hawaii Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife takes measures for the prevention, control, and extinguishment of wildland fires within forest reserves, public hunting areas, wildlife and plant sanctuaries, and natural area reserves. [1] • Hawaii does not participate in wildland prescribed burning practices. [3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The DLNR cooperates with established fire control agencies of the counties and federal government in developing plans and programs and mutual aid agreements for assistance for the prevention, control, and extinguishment of fires on forest, grass, brush, and watershed lands not within the DLNR's fire protection responsibilities. [1] • The regulations do not discuss any formal MOU's.
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Hawaii does not have a smoke management plan. • Forestry and Wildlife branch managers will minimize the threat of fires by maintaining control through the issuance of burning permits. On lands where the DLNR has responsibility, agreements will be established with the Department of Health to require burning plans acceptable to the managers and the county fire chief. Holders of permits will start no fires during a heavy wind or without sufficient help present to control the fires and will maintain a constant watch over the fires until they have been extinguished. [1]

Smoke Management Program Component	State
	Hawaii
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The rule and handbook cover measures for the prevention, control, and extinguishment of wildland fires. • Hawaii's open burning rules (HI Administrative Rules 11-60.1), which are not discussed in this summary, cover agricultural burning measures.
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • The State Department of Health issues burning permits with consultation from the county fire departments. [4]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The issuance of permits shall be at the discretion of the issuing officer who will take into account whether the issuance of a permit is compatible with safety. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The administrator of Forestry and Wildlife is responsible for coordinating the work of the Forestry and Wildlife branch managers and reviewing their plans for fire protection and control. A manager is in charge or in support of all measures for the prevention, control, and execution of wildland fire protection in the manager's branch. [1] • Branch managers determine training curriculums and schedules for their branches based on their respective fire suppression organization needs. The division uses the National Wildfire Coordinating Group's (NWCG) qualification guidelines to meet these requirements. Every employee involved in DLNR suppression activities are required to have the formal Basic Wildland Fire Training course as a foundation for subsequent formal fire training. [2]
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Presently, the only people doing any type of "controlled" burn is the sugar companies. The U.S. Army has recently completed several test burns within their training areas on Oahu and Hawaii. The Division of Forestry and Wildlife is considering using fire as a land management tool. We are scheduling classes next Spring to qualify our personnel as burn bosses. [4] • Not applicable. [4] • Not applicable. [4]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • We don't have the problem with smoke lingering in the valleys like those experienced in the continental U.S. Trade- and local winds usually carry the smoke out to the ocean. Even when cane burning is done, the smoke usually is dissipated within a few hours of operation. [4] • Not applicable. [4]

Smoke Management Program Component	State
	Hawaii
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Not applicable. [4] • Not applicable. [4]

Smoke Management Program Component	State
	Hawaii
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Not applicable. [4] • Not applicable. [4]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Not applicable. [4] • Not applicable. [4] • Not applicable. [4]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • During cane fires, the public is notified by the sugar company at least 24 hours prior to a burn. This is done on local radio stations. [4]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Not applicable. [4] • Not applicable. [4]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • None of the questions are applicable. [4]

Smoke Management Program Component	State
	Hawaii
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Branch fire prevention strategies include the following public education measures: 1) Smokey Bear material/fire prevention radio and TV spots; 2) Talks to schools, civic organizations, etc.; 3) Public notices/news releases declaring high fire danger periods; and 4) Posting of fire prevention/high fire danger warning signs and posters. [2]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Not applicable. [4]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Any person who violates a restriction of closure or who discards burning material within a closed fire area, or, every person who sets a fire on land within the closed fire area without a permit, or, every person who willfully, maliciously, or negligently sets a fire which burns property not owned, leased, or controlled by the person will be guilty of a misdemeanor. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Not applicable. [4] • Not applicable. [4]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Not applicable. [4]
21. What are the review criteria?	<ul style="list-style-type: none"> • Not applicable. [4]

Smoke Management Program Component	State
	Hawaii
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	• None of the questions are applicable. [4]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	• None of the questions are applicable. [4]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	• Not applicable. [4]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	• None of the questions are applicable. [4]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	• Not applicable. [4]

Smoke Management Program Component	State
	Hawaii
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Not applicable. [4] • Not applicable. [4]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Not applicable. [4]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Not applicable. [4]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Not applicable. [4] • Not applicable. [4]

Source of summary information:

- [1] Montana/Idaho State Airshed Group Operating Guide. September 1999.
- [2] Idaho Administrative Code, 58.01.01, Air Pollution Control, Sections 600 through 616, Rules for Control of Open Burning. 1998.
- [3] Comments received from the Idaho Department of Environmental Quality on August 27, 1999.
- [4] Idaho Administrative Code, 58.01.10, Air Pollution Control, Section 550 through 562, Air Pollution Emergency Rule. Amended April 5, 2000.
- [5] Comments received from the Idaho Department of Environmental Quality on September 27, 2000.

Special Notes:

- The version of the Montana/Idaho Smoke Management Program Operating Guide used in this survey is an “interim” guide. Further revisions and corrections will be made during the winter of 2000.
- This survey has been reviewed by the Idaho Division of Environmental Quality. For more information, contact Diane Riley, Air Quality Analyst, IDEQ, 1410 North Hilton Street, Boise, ID, 83706-1255.

Smoke Management Program Component	State
	Idaho
Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Idaho Division of Environmental Quality (DEQ) has the final authority on any burn restrictions as authorized in the open burning and emergency episode rules. [2][3][4]• The Monitoring Unit (consisting of a meteorologist and a program coordinator) is the decision-making body and makes a recommendation each day as to whether or not any restrictions on burning are necessary for the following day. [1][5]• Member burners have final responsibility for ignition. Members are expected to curtail burning if there is not adequate smoke dispersion or local weather factors may result in smoke problems. Burners may contact the Monitoring Unit to request an exception to a restriction if local conditions appear more favorable than what is forecasted by the Monitoring Unit. [5]

Smoke Management Program Component	State
	Idaho
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • Idaho is part of the Montana/Idaho State Airshed Group (Airshed Group). The Airshed Group is composed of three Units: Montana, North Idaho and South Idaho. The intent of the Airshed Group is to minimize or prevent smoke impacts to communities while using fire to accomplish land management objectives or fuel hazard reduction. The members of the Airshed Group (Members) agree to develop and abide by the Montana/Idaho State Airshed Group Operating Guide (Operating Guide). The Operating Guide contains pertinent agreements, guidelines, deadlines, plans and procedures inherent to the successful operation of the Airshed Group. • Several Memorandums of Agreement (MOA) are contained within the Operating Guide, including the North Idaho Smoke Management MOA effective September 1990, the South Idaho Smoke Management MOA for Forest and Range Prescribed Burning effective February 1999, and the North Idaho and Montana Airshed Group MOA effective August 1990. The objectives of the MOA are to minimize or prevent the accumulation of smoke, to develop a smoke management plan, and to review the plan annually. [1][5]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • MOA Signatories agree to develop and implement the Smoke Management Plan and are responsible for proper smoke management in their areas of operation. [1][5] • The program is voluntary. Non-members are encouraged to participate and new members are welcome to join anytime. [3][5]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The program applies to Federal, State, Tribal, and private forest and range prescribed burning. [3][5] • Agricultural burning is addressed in a separate program. [3] • Prescribed natural fire (wildland fire managed for resource benefits) is being addressed under a separate program by the USFS and BLM. Additional information can be found at: http://www.fs.fed.us/r1/fire/nrcc/Smoke_web_pages/intro.htm [5] • The open burning rule discusses orchard fires (open outdoor fires to dispose of orchard clippings), and prescribed burning (open outdoor fires to obtain the objectives of prescribed fire management burning). [2][5]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • MOA Signatories are required to provide to the Monitoring Unit a list of all prescribed burns planned for the entire calendar year. [1][5] • Each MOA Signatory is required to submit a daily report of planned burning for the next day to the Local Airshed Coordinator who forwards it to the Monitoring Unit. [1][5]

Smoke Management Program Component	State
	Idaho
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • A prescribed burning restriction must not be in place. The need for a prescribed burning restriction is determined by evaluating existing air quality conditions, meteorological conditions, planned burns, and the expected amount of residual smoke from previous days' burning. Upon analysis of all available information, the Monitoring Unit recommends whether any burning restrictions are necessary for the following day. [1][5] • Restrictions can be statewide; by individual Airshed(s); by elevation within an Airshed(s); by individual burn number(s); by impact zone(s); by time periods; and any combination thereof. [3][5] • Member agencies and industries are responsible for ensuring that all burning crews are aware of any burning restrictions. [1][5]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The North Idaho Smoke Management MOA exists between the following agencies and companies: Idaho DEQ, USFS Regional Forester, BLM State Director, National Weather Service, Western Region, DAW Forest Products, Inland Empire Paper, Louisiana Pacific Corp., BIA Area Director, Idaho Dept. Of Lands, Plum Creek Timber Co., Inc., State of Idaho Dept. of Fish and Game, Potlatch Corp. Western Division, University of Idaho College of Forestry, Wildlife & Range Sciences, and the U.S. Army Corps of Engineers. [1] • The South Idaho Smoke Management MOA exists between the South Idaho members. The signatory members are: Idaho DEQ, Idaho Dept. of Lands, USFS Regional Forester, BLM State Director, and Boise-Cascade Corporation. The MOAs are included in the revised Operating Guide. [1][3][5] • The North Idaho and Montana Airshed Groups also have a MOA. [1] • All MOA Signatories agree to abide by the Operating Guide. [1] • Burner qualifications are not included in the Operating Guide. Smoke management training is available through state and federal agency training courses. [5]
Minimizing Air Pollutant Emissions	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The Open Burning Rule states "Two (2) years from the date of any economical and reasonable alternative to a specific usage of open burning has been approved by the Director, that usage of open burning will no longer be allowable under Section 606 through 616." [2][3] • The MOAs state that alternative methods are to be encouraged when such methods are practical. [1] • Emission reductions are not tracked. [5]

Smoke Management Program Component	State
	Idaho
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Air Pollution Emergency Rule: During periods of atmospheric stagnation and/or degraded air quality, the DEQ can suspend all open burning. [4][5] • The Monitoring Unit considers existing air quality conditions and other local data in each Airshed when determining the need for burning restrictions. Upon analysis of all available information concerning planned burning, forecast meteorological conditions and existing air quality, the Monitoring Unit recommends whether any restrictions to burning are necessary for the following day. [1][5] • The Operating Guide expects Members to curtail burning if they are not getting adequate smoke dispersion or if local weather factors are such that smoke problems could result. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • All the actions taken as indicated in the answer to question 9 are documented. The information is used during annual program evaluation. [5]

Smoke Management Program Component	State
	Idaho
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • MOA Signatories must provide, on their annual list of planned burns, the following information for each planned burn: 1) identification number (the Program Coordinator assigns each MOA Signatory a block of numbers), 2) legal description, 3) elevation, 4) planned number of acres, 5) type of burn, 6) Airshed number, and 7) impact zone code. [1][3]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • Each morning a weather balloon is used to obtain an upper air sounding at selected cities in Montana and Idaho for the program. The Monitoring unit uses this data, along with other available surface and upper air data, and numerical models, to analyze dispersion conditions (wind speed, wind direction, mixing height, and stability). The Monitoring Unit also considers existing air quality conditions and other local data in each Airshed when determining the need for burning restrictions. Upon analysis of all available information concerning planned burning, forecasted meteorological conditions, and existing air quality, the Monitoring Unit decides whether any restrictions to burning are recommended for the following day. The smoke dispersion forecast and burn restrictions are posted on the web by 3:30pm daily (Friday’s forecast includes forecast and burn restrictions through Monday). [1][5] • Members are expected to curtail burning if, in their opinion, they are not getting adequate smoke dispersion, or if local weather factors are such that smoke problems could result. [1] • Visibility in Class I areas is taken into account when prescribed burning is being conducted in or nearby the Class I areas. [5]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • The public can find out about any burn restrictions in their area by calling the hotlines or looking at the following web site: http://www.smokemu.org. [5]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Prescribed burning restrictions are in effect as long as stagnant meteorological conditions and/or elevated air quality concentrations persist. [3][5]

Smoke Management Program Component	State
	Idaho
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • DEQ has real-time PM10 and PM2.5 air quality monitors located throughout the State (TEOMS and nephelometers). DEQ provides the data daily to the Monitoring Unit. [3] • The Monitoring Unit is responsible for the daily monitoring of meteorological data, air quality information, and planned forest and range prescribed burning. It is responsible for notifying Local Airshed Coordinators when acceptable limits of smoke accumulation are threatened to be exceeded. [1][5] • DEQ uses stagnant meteorological conditions and air quality concentrations as thresholds for issuing open burning bans under the authority of the Air Pollution Emergency Rule. [4][5]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • One of the roles of the Airshed Group is to prepare and disseminate information on prescribed burning. The Airshed Group has a web page at http://www.smokemu.org/About_us.html that explains the function of Group and gives general information on prescribed burning. [1] • The Airshed Coordinators are available to answer questions and inquiries concerning the smoke management program from the public. [1] • The public can find out about any burn restrictions in their area by calling the hotlines or looking at the following web site http://www.smokemu.org. [5] • Although the operating guide does not discuss how the public can file a complaint, the guide contains procedures for handling public complaints. [1] • A brochure on the program is available to the public. [3] • DEQ posts daily air quality data on a web site which includes any open burning restriction information. [5]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Complaints and real-time air quality monitoring are used to monitor compliance. [3]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Should any MOA Signatory fail to follow any procedures, requirements or restrictions issued under the SMP, it is considered grounds for revocation of their membership in the SMP. [1] • The Department of Environmental Quality may take appropriate action as authorized under existing State statutes or rules and regulations for violation of open burning. [1][5] • The Open Burning Rule does not exempt burners from liability for damages or injuries that result from open burning. [2][5]

Smoke Management Program Component	State
	Idaho
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Yes, members must compile and submit to the Program Coordinator a final listing by burn number of all prescribed burns accomplished during the calendar year. The Accomplishment Report must contain the dates on which the burns were accomplished, the total acres burned, and the tons/acre of fuel consumed (not all members) on each burn unit. [1][5]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Program evaluation is conducted in the spring during an annual meeting of all members. The Executive Committee meets as needed to evaluate the program and discuss any needed improvements.[1][3][5]
21. What are the review criteria?	<ul style="list-style-type: none"> • The annual report, which is completed for the annual membership meeting, includes a comparison of burn restrictions to air quality concentrations, and summary of smoke events and complaints. [3][5]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Special protection zones are defined as impact zones. Impact zones are any area of the State which is determined to be a smoke sensitive area. Appendix 2 of the Operating guide contains lists of impact zones. [1] • All nonattainment areas are included in impact zones. Other areas of concern are also identified as impact zones. [3] • Restrictions on burning may be made by impact zone. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Each Member is responsible for proper smoke management in their area of operation. [1] • Each MOA Signatory adheres to the Airshed Group’s restriction procedures which enables the Monitoring Unit to reduce burning, stop burning in specific areas, or cease burning entirely when meteorological or existing air quality conditions warrant. [1]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Each MOA Signatory adheres to the Airshed Group’s restriction procedures which enables the Monitoring Unit to reduce burning, stop burning in specific areas, or cease burning entirely when meteorological or existing air quality conditions warrant. [1][5] • Should any MOA Signatory fail to follow any procedures, requirements or restrictions issued under the SMP, it is considered grounds for revocation of their membership in the SMP. [1][5] • The Department of Environmental Quality may take appropriate action as authorized under existing State statutes, or rules and regulations for violation of open burning. [1][5]

Smoke Management Program Component	State
	Idaho
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The Rules do not include a specific nuisance rule. There are, however, general odor and visible emission rules (58.01.01. 625 and 58.01.01.775). The odor rule states that no person shall allow, suffer, cause, or permit the emission of odorous gases, liquids or solids in such quantities as to cause air pollution. The visible emission rule specifies opacity standards for any point of emission. [2][3][5] • In addition, there may be general public nuisance regulations that would allow someone to seek relief through court actions not associated with the air quality rules. [5]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Although the State Open Burning Rule is part of the Idaho SIP and indicates that the Idaho DEQ will develop and put into effect a smoke management plan for prescribed burning, the program has never been formally submitted as part of the SIP or approved by the EPA. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Each member pays an annual membership fee (including Idaho DEQ) and there is an additional per acre fee for accomplished burns. The fee varies depending on whether it is a forest or range burn. There were additional "start-up" costs when the North and South programs were initiated. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Starting in 2000, the program will be collecting year-round data (as described in #11 and 19) that could be used to develop annual emissions inventories for forest/range prescribed burning. Non-member burn activity data would not be included, but the data would represent the bulk of the Federal, State, and private burn activities. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No. [3] • Also see answers to questions 8, 9, and 10. [5]

Smoke Management Program Component	State
	Idaho
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • After the next revision of the SMP, the state plans to certify the SMP to the EPA. [5]

Source of summary information:

- [1] Montana/Idaho State Airshed Group Operating Guide. September 1999.
- [2] Comments received from the Department of Environmental Quality, Permitting and Compliance Division, Air & Waste Management Bureau dated August 19, 1999.
- [3] Montana Department of Environmental Quality Rules, Title 17, Chapter 8-Air Quality, Sub-Chapters 5-Air Quality Permit Application, Operation and Open burning Fees; 6-Open Burning; 11-Visibility Impact Assessment; and 14 - Conformity of General Federal Actions.
- [4] Comments received from the Montana Department of Environmental Quality, Permitting and Compliance Division, Resource Protection Planning Bureau dated July 13, 2000.
- [5] Comments received from Scott Kuehn, Plum Creek Timber Company, October 23, 2000.

Special Note:

- This survey was reviewed by the Montana Division of Environmental Quality and the Plum Creek Timber Company. For more information, contact Robert Habeck, Air Quality Specialist, MDEQ, 1520 E. 6th Avenue, Helena, MT, 59620, or Scott Kuehn, Plum Creek Timber Company, 140 North Russell, Missoula, MT, 59801.

Smoke Management Program Component	State
	Montana
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Monitoring Unit consists of a full time meteorologist/program coordinator and is the decision-making body during the spring (March through June) and fall (September through November)prescribed burning seasons and makes a recommendation to the Department of Environmental Quality (DEQ) each day as to whether or not any restrictions on burning are necessary for the following day. The DEQ has the regulatory authority to restrict burning and makes the final restrictions (75-2-201-233, MCA). [1][4]• In addition to the Monitoring Unit, airshed coordinators located within the 10 geographically defined Montana airsheds have responsibility for coordinating or restricting burns. [1][4]• From June 1 through August 30 the burn/no burn decision is left up to the burner. [2]• Open burning is generally closed from December 1 through February 29. [2]

Smoke Management Program Component	State
	Montana
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • Montana is part of the Montana/Idaho State Airshed Group (Airshed Group). The Airshed Group is composed of three Units: Montana, North Idaho and South Idaho. The intent of the Airshed Group is to minimize or prevent smoke impacts to communities while using fire to accomplish land management objectives or fuel hazard reduction. The members of the Airshed Group (Members) agree to develop and abide by the Montana/Idaho State Airshed Group Operating Guide (Operating Guide). The Operating Guide contains pertinent agreements, guidelines, deadlines, plans and procedures inherent to the successful operation of the Airshed Group. [1] • Several Memorandums of Agreement (MOA) are contained within the Operating Guide, including the North Idaho and Montana Airshed Group MOA and the Montana Smoke Management MOA (MSM-MOA). Two of the objectives of the MOAs is to minimize or prevent the accumulation of smoke in Montana and to develop a smoke management plan. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • MOA Signatories agree to abide by the Smoke Management Plan for Montana and are responsible for proper smoke management in their areas of operation. [1] • If an entity meets the definition of a major open burner, it needs to apply for a permit even if it is not part of the Airshed Group. [2] Major Open Burners do not have to be members of the MSM, but need to follow all restrictions issued by the DEQ. [5]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The Operating Guide covers fires used to accomplish land management objectives, fuel hazard reductions, regeneration and wildlife habitat improvement. [1] • The Smoke Management Plan was not established to regulate agricultural burning, but the fall restrictions do apply to agricultural burners. [2]

Smoke Management Program Component	State
	Montana
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • All major open burners (defined as any person, institution, business or industry conducting open burning that emits more than 500 tons of CO or 50 tons of any other pollutant per year) must obtain an annual burning permit from the DEQ and pay a fee based on emissions produced. Signatories to the MSM-MOA obtain an annual burning permit as part of being a member and following all rules and regulations of the Group. January 1 is the start date of the annual permit. [1] [2] • Prior to March 1 of each year, all MOA Signatories are required to provide to the Monitoring Unit, a list of all prescribed burns planned for the entire calendar year. [1] An update of the burn list is allowed until August 31 for the fall burning season. [5] • Each MOA Signatory is required to submit a daily report of planned burning for the next day to the Local Airshed Coordinator. [1] The Airshed Coordinators gather all of the proposed burns from their respective Airsheds and pass that information onto the Monitoring Unit. The Monitoring Unit evaluates existing air quality conditions, meteorological conditions, amount of proposed burns and the expected amount of residual smoke from previous days' burning. Restrictions by Airshed are then forwarded onto the DEQ for final approval. The DEQ can accept or modify these recommendations based on all of the available criteria. The DEQ issues final restrictions by 4:00 local time and these are posted on the web site and the hotline. Restrictions can be by individual burn, group of burns, by elevation, or Impact Zone, or any combination. This system allows burns that will not impact air quality to continue, but restricts those that will. [5] • For pre-season operations (after September 1 but before the startup of the Monitoring Unit), signatories to the MSM-MOA needing to burn must contact their Group Representative by 10 a.m. each day with their planned acreage and location. During pre-season, signatories to the MSM-MOA may assume they are authorized to burn if they have an Air Quality Permit and their daily planned burn lists were submitted to their Group representative, but must conform to the best available control technology (BACT) and have good or better ventilation . [1] • MSM-MOA Members planning to conduct "Essential Winter Burning" (burning performed December through February) are required to submit a planned winter burn list to the Monitoring Unit not later than November 1 of each year. [1] • The list for those planning to conduct "Essential Winter Burning" is reviewed by the monitoring unit coordinator and passed along to the DEQ, who, in turn, notifies the burner of approval or denial of the proposed burn. [2] • Each MOA signatory is responsible for making burning crews aware of any burning restrictions. [1]

Smoke Management Program Component	State
	Montana
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • A burning restriction must not be in place. The need for a burning restriction is determined by evaluating existing air quality conditions, meteorological conditions, and the expected amount of residual smoke from previous days' burning. Upon analysis of all available information, the Monitoring Unit recommends restrictions to the DEQ and they decide whether any restrictions to burning are necessary for the following day. [1][4] • Essential winter burning will be conducted only when good or excellent smoke dispersion conditions are indicated by the National Weather Service (NWS). [1] • Each MOA signatory is responsible for making burning crews aware of any burning restrictions. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The MSM-MOA exists between the following agencies and companies: Montana DEQ, USFS Regional Forester, BLM State Director, Glacier National Park Superintendent, NWS, Western Region, Yellowstone National Park Superintendent, Missoula City-County Air Pollution Control Board, Smurfit-Stone Container Corp., R-Y Timber Inc., BIA Area Director, DNRC, Plum Creek Timber Co., Inc., Big Sky Lumber Co., Department of Fish, Wildlife and Parks, U.S. Department of Fish & Wildlife Service, Pyramid Mountain Lumber, Louisiana Pacific, and Stolze Land & Lumber Co. [1] • Burner qualifications are not explicitly outlined in the Operation Guide. However, proposed language encourages land managers to train personnel in proper smoke management techniques. Smoke management training is available through state and federal agency training courses (i.e. RX-450). [4]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Both MOAs state that alternative methods are to be encouraged when such methods are practical. No further detail regarding alternative methods is provided. [1] • The smoke management program operates on fees based upon emissions produced. Lower fees may be an incentive for choosing alternative treatments. However, alternatives generally cost more to implement than the potential fee savings. [4] • Currently, emissions tracking does not take place. [4] Except that data collected as part of the fee calculation. [5]

Smoke Management Program Component	State
	Montana
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The rules (ARM 17.8, Sub-Chapter 6) require that BACT be applied to minimize emissions from fires. BACT means those techniques and methods of controlling emission of pollutants from an existing or proposed open burning source, which limit those emissions to the maximum degree, which the department determines, on a case-by-case basis, are achievable for that source, taking into account impacts on energy use, the environment, and the economy, and any other costs, including cost to the source. Such techniques and methods may include the following: scheduling of burning during periods and seasons of good ventilation, applying dispersion forecasts, utilizing predictive modeling results performed by and available from the department (DEQ) to minimize smoke impacts, limiting the amount of burning to be performed during any one time, using ignition and burning techniques which minimize smoke production, selecting fuel preparation methods that will minimize dirt and moisture content, promoting fuel configurations which create an adequate air to fuel ratio, prioritizing burns as to air quality impact and assigning control techniques accordingly, and promoting alternative treatments and uses of materials to be burned. [2][3] • Members are expected to curtail burning if they are not getting adequate smoke dispersion or if local weather factors are such that smoke problems could result. [1] <p style="text-align: right;"><i>Continued on next page</i></p>
9. <i>Continued</i>	<ul style="list-style-type: none"> • The Monitoring Unit considers existing air quality conditions and other local data in each Airshed when determining the need for burning restrictions. Upon analysis of all available information concerning planned burning, forecast meteorological conditions and existing air quality, the Monitoring Unit decides whether to recommend to DEQ restrictions to burning necessary for the following day. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Currently, the Operations Guide and state open burning rules do not require the documentation of emissions reduction actions. However, proposed language seeks to require minimum burn plan elements that may include documenting emissions reductions. [4]
<i>Smoke Management Components of Burn Plans</i>	

Smoke Management Program Component	State
	Montana
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Currently, burn plans are not required by the SMP. However, signatories to the MSM-MOA must provide, on their annual list of planned burns, the following information for each planned burn: 1) identification number (the Program Coordinator assigns each signatory a block of numbers), 2) legal description, 3) elevation, 4) number of acres, 5) estimate of fuel consumption (tons/acre consumed) (needed on the end-of-season accomplishment report), 6) type of burn, 7) airshed number, and 8) impact zone code. [1] Accomplishment dates of each burn are required for the end of season report. [5] • The DEQ requires that for essential winter burning enough information be recorded so that a decision can be made by the DEQ that these burns are truly essential. Essential winter burning means that the unit can not be burned at any other time of the year, except during December through the end of February. At a minimum, information to be documented includes: assigned State Airshed Group number for each burn, legal location of burn, size of burn, type of burn (e.g., road clearing, piles, pit burning), fuel load, elevation of burn, and a brief explanation detailing why the burn is an essential winter burn. [1][5]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Each morning a weather balloon is used to obtain an upper air sounding at selected cities in Montana and Idaho. The resulting temperature and wind information is plotted by the Monitoring Unit and then relayed to the NWS office at Missoula. The NWS will compile all meteorological data and issue an updated management forecast each day at approximately 9 AM, and a forecast for the following day at approximately 3:30 PM. Burners may also work directly with the NWS Fire Weather Forecasters to obtain spot weather forecasts for specific burns. [1] • Members are expected to curtail burning if, in their opinion, they are not getting adequate smoke dispersion, or if local weather factors are such that smoke problems could result. [1] • Essential winter burning will be conducted only when good or excellent smoke dispersion conditions are indicated by the NWS. [1] <p style="text-align: right;"><i>Continued on next page</i></p>
12. Continued	<ul style="list-style-type: none"> • The Monitoring Unit considers existing air quality conditions and other local data in each Airshed when determining the need for burning restrictions. Upon analysis of all available information concerning planned burning, forecast meteorological conditions and existing air quality, the Monitoring Unit makes recommendations to the DEQ whether any restrictions to burning are necessary for the following day. [1] • The DEQ requires that burners demonstrate that emission from a major source will not cause or contribute to adverse impact on visibility within a Federal Class I area or the DEQ will not issue a permit. Estimates of visibility impact must be based on models contained in "Workbook for Plume Visual Impact Screening and Analysis" (EPA-450/4-88-015, 1988). [3]

Smoke Management Program Component	State
	Montana
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • The available information does not discuss if the affected public must be notified when fires are authorized. However, the Operating Guide does discuss how to process a citizen complaint which should include an explanation of the smoke control program. [1] • The public can find out about restrictions in their area by calling the hotline or looking on the Internet. [2] • The public is notified by way of the legal notices in the major newspapers for each major open burners application for their Open Burning Permit. It is not required to notify the public of each burn. [5]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • The Operating Guide does not require contingency plans to reduce exposure to smoke if intrusions occur. [4] • Burning restrictions during the programs operation would continue through the intrusion event - until conditions improve. [2]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • During the months of March through June and September through November, the Monitoring Unit is required to monitor daily meteorological data, ambient air quality information, and planned forestry burning. The Monitoring Unit is responsible for notifying local Airshed Coordinators, DEQ and local authorities when acceptable limits of smoke accumulation are threatened to be exceeded. [1][4][5] • The DEQ tracks thermo-electric oscillating monitor (TEOM) data on a daily basis. [2] • Emissions thresholds are not spelled out in the Operations Guide though as a guideline, restriction are imposed to maintain PM-10 levels around 50 and below or about 1/3 of the NAAQS standards. However, the program has Impact Zones around each nonattainment area where greater sensitivity to burn restrictions is observed. County air programs have threshold stages with required control activities. [4] This is not true, Missoula County for example has thresholds based on PM-10 regardless of source. [5]

Smoke Management Program Component	State
	Montana
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • One of the roles of the Airshed Group is to prepare and disseminate information on open burning. The Airshed Group has a web page at http://www.smokemu.org/About_us.html that explains the function of Group and gives general information on prescribed burning. [1] • The Airshed Coordinators are available to answer questions and inquiries concerning the smoke management program from the public. [1] • The public can find out about any burn restrictions in their area by calling the hotlines or looking at the following web sites for the fall program and the prototype spring/summer program: http://www.smokemu.org and http://www.fs.fed.us/r1/fire/nrcc/smoke.html [3] • Although the Operating Guide does not discuss how the public can file a complaint, the guide contains procedures for handling public complaints. [1] • The Airshed Group prepared a brochure to educate people about the Group and smoke management. [2] • The Airshed Group was formalized in 1979, public participation is unknown. Formal and informal prescribed fire and fire ecology information is disseminated in association with individual prescribed burns through the NEPA process or informal meetings. [4]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The DEQ and the Group rely on complaints and TEOM readings to monitor compliance. [2]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Should any MOA signatory fail to follow any procedures, requirements or restrictions issued under the SMP, it may be considered grounds for revocation of their annual air quality permit, and/or membership in the SMP. The DEQ or local air pollution control agency may take appropriate action as authorized under existing State or local statutes, rules and regulations for violation of open burning rules and regulations. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Yes, prior to the last day of January (after the fall burning season), Members must compile and submit to the Program Coordinator a final listing by burn number of all prescribed burns accomplished during the prior calendar year. The accomplishment report must contain the dates on which the burns were accomplished, the total acres burned, and the tons/acre of fuel consumed on each burn unit. [1]

Smoke Management Program Component	State
	Montana
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • MOA signatories agree to evaluate each of their smoke management programs, and review their agreements and make improvements to each program at the end of the burning year (on December 1). [1] • Signatories to the MSM-MOA agree to evaluate the program, review the Agreement and improve the SMP where feasible. [1]
21. What are the review criteria?	<ul style="list-style-type: none"> • The annual report, which is completed for the annual membership meeting, includes a comparison of burn restrictions to air quality concentrations. [1]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Special protection zones are defined as impact zones. Impact zones are any area that the Airshed Group (or the DEQ or local air quality program) determines to be a smoke sensitive area. Appendix 2 of the Operating guide contains lists of impact zones. [1][5] • Impact zones may be established by the Airshed Group, the DEQ or local air quality authority; a general description of the impact zone is given in the SMP operating guide. [2] • Restrictions on burning may be made by impact zone, individual burn and or by elevation within the impact zone. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The Operations Guide does not establish any performance standards. However, each Member is responsible for proper smoke management in their area of operation. [1][4] • Each MOA signatory adheres to the Airshed Group’s restriction procedures which enables the Monitoring Unit to reduce burning, stop burning in specific areas, or cease burning entirely when meteorological or existing air quality conditions warrant. [1]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • There are no additional smoke management requirements that apply if the performance standards have been exceeded. [4]

Smoke Management Program Component	State
	Montana
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> The rules do not include specific provisions regarding a potential nuisance created by open burning (except for firefighter training). There is a general section of the Rules (ARM 17.8.315) that pertains to odors. Those rules state that no person shall cause, suffer or allow any emissions of gases, vapors or odors beyond his property line in such a manner as to create a public nuisance. In addition, there may be general public nuisance regulations that would allow someone to seek relief through court actions not associated with the air quality rules. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> Yes, see 59 FR 2988. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> The State portion of the smoke management program is fee funded (see Rule 17.8.500). Currently, the fees for "major open burners" are based on the actual or estimated actual amount of air pollutants emitted in the last calendar year. This is calculated based on tons of particulate matter, oxides of nitrogen, and volatile organic compounds using emission guidelines from AP-42 handbook. The fees are adjusted periodically to cover the Department's costs and the cost of the Meteorologist/Program Coordinator of operating the smoke management program. In kind services may be used to reduce the fees of some major open burners. [2][5]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> The State maintains an annual emission inventory of open burns. A description of each planned open burn is included with a permit application. The Department does not attempt to separate prescribed natural fires from other fires, such as slash burns. The emissions that are used to calculate fees are generally based on post-burn reports. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> See Question #9. [4]

Smoke Management Program Component	State
	Montana
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Montana is proposing to certify its SMP to the EPA following the incorporation of necessary language into the Operation Guide. Revisions to the Operating Guide may be completed by Fall 2000. [4]

Source of summary information:

- [1] Missoula City-County Air Pollution Control Program Regulations, Chapter IX, Subchapter 13-Open Burning, Rule 1301-1311. Amended and revised November 1, 1997.
- [2] Agreement Between Agencies Involved in the Regulation of Outdoor Burning in Missoula County to Cooperate in Outdoor Burning Permit Issuance and Enforcement.
- [3] Missoula County Fire Protection Association, Burning Permits. Available at <http://www.mcfpa.org/permits.phtml>.
- [4] Comments received from the Missoula City-County Health Department, Environmental Health Division, dated September 22, 2000.

Other available information:

- Missoula City-County Air Pollution Control Program. Proposed Changes - Second Draft, Public Comment Document, June 5, 2000.

Special Note:

- Missoula City-County Air Pollution Control Program Regulations are currently being revised. This summary is based on the existing regulation dated November 1, 1997.
- This survey was reviewed by the Missoula City/County Health Department. For more information, contact Shannon Therriault, Missoula CCHD, 301 West Alder, Missoula, MT, 59802.

Smoke Management Program Component	Missoula
	Montana
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Agreement authorizes all signatory fire protection agencies to issue outdoor burning permits within their geographic area of jurisdiction. [2]

Smoke Management Program Component	Missoula
	Montana
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • A formal agreement exists between the agencies that regulate outdoor burning in Missoula County. The purpose of the Agreement is to provide for a single unified outdoor burning permit throughout Missoula County that combines outdoor burning permits and air quality permits which will satisfy the requirements of Missoula County and City regulations. The Agreement outlines the responsibilities of the Missoula City-County Health Dept (MCCHD) and the Fire Protection Agencies. [2] • Signatories to the agreement are several Missoula County Commissioners, Missoula City Mayor, Air Pollution Control Board, Clearwater Unit-Dept. of Natural Resources, Clinton Rural Fire Dept., East Missoula Rural Fire Dept, Florence Rural Fire Dept., Frenchtown Rural Fire Dept., Greenough/Potomac Fire Dept., Missoula City Fire Dept., Missoula Ranger District-USFS, Missoula Rural Fire Dept., Missoula Unit-Dept. of Natural Resources, Ninemile Ranger District-USFS, Seeley Lake Rural Fire District, Swan Unit-Dept. of Natural Resources and Seeley Lake Ranger District-USFS. [2] • A management team consisting of the Chair of the Missoula County Fire Protection Association (MCFPA), the Director of Environmental Health, and the County Sheriff is designated as the outdoor burning coordinating team for purposes of managing mutual cooperation and further defining policies. [2] • In addition to the outdoor burning coordinating team, Missoula's outdoor burning program is fine-tuned through bi-monthly Missoula County Fire Protection Association meetings, where outdoor burning is regularly discussed. The MCCHD also participates in those meetings. [4] • The MCCHD also coordinates with the Montana/Idaho Interstate Airshed Management Group (Airshed Group). The MCCHD uses forecasts produced by the Group's meteorologist and mirrors the restrictions placed on the major burners. The MCCHD and meteorologist often discuss the next day's restrictions before they are finalized. [4]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The available information does not specifically discuss a smoke management plan; however all outdoor burning requires a permit and compliance with best available control technology (BACT). [1][2] • The MCCHD's air regulations, in essence, make participation in the smoke management program mandatory for every burner in Missoula County. The regulations require a permit for every burn, and the permit, in turn, requires the burner to call the outdoor burning hotline on the day they wish to light the fire. The County's hotline reflects the Airshed Group's restrictions when its monitoring unit is operating and making forecasts. However, only the major burners and the MCCHD participate monetarily in the program. [4] • There are a lot of requirements burners in Missoula County must adhere to that are not part of the Airshed Group's program, especially for the smaller burners. These requirements include getting a permit, not burning prohibited materials, and adhering to the hours for burning set out by the permit. [4]

Smoke Management Program Component	Missoula
	Montana
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • All burns in the County are covered, except small recreational fires. The Regulations discuss essential agricultural open burning (open burning conducted on a farm or ranch to eliminate excess vegetative matter from irrigation ditches, eliminate excess vegetative from cultivated fields, improve range conditions or improve wildlife habitat); and prescribed wildland open burning (planned open burning, either deliberately or naturally ignited, that is conducted on forest land or relatively undeveloped rangeland to improve wildlife habitat, improve range conditions, promote forest regeneration, reduce fire hazards, control forest pests and diseases and promote any other accepted silvicultural practices). [1][4] • The fire departments issue permits for general burning, essential agriculture burning and prescribed wildland burning. The MCCHD issues permits for major burners, firefighter training, bonfires, commercial film making, conditional permits (for trade waste and burns at landfills) and emergency outdoor burning. The MCCHD allows the major burners to use a State of Montana permit for outdoor burning when the Airshed Group's monitoring unit is in operation. [4]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • All burns must have a permit. The burner must call the outdoor burning hotline for permission to burn on any given day. The hotline is a recorded message that lists any restrictions in place due to air quality or fire danger concerns. In some fire districts, burners must also contact the fire agency the day they want to burn. [4] • For minor open burns (emits less than 500 tons per calendar year of carbon monoxide or less than 50 tons per year of any other regulated pollutant), the burner must conform with BACT, comply with all open burning rules and regulations (except Rule 1304-Major Open Burning Source Restrictions) and adhere to the time periods set by the MCCHD for burning. In addition, for prescribed wildland open burning during December, January or February, the burner must submit a written request demonstrating that the burn must be conducted prior to reopening of open burning in March and receive specific permission for the burn. [1] • For major open burning, (emits more than 500 tons per calendar year of carbon monoxide or more than 50 tons per year of any other regulated pollutant), the burner must submit an application for an open burning permit, provide proof of publication of public notice, conform with BACT and adhere to all conditions in the permit. [1] • Large burners, operating under the state permit, have to submit the areas they want to burn the day before. They then have to call the state's ventilation hotline, or check the Airshed Group's website, to see what restrictions have been placed on burning. They are allowed to burn any submitted areas that are not under a restriction. [4]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • For minor open burns the burner must have an approved permit and it must be an approved burning day. [1][3] • For major open burns the burner must have an approved permit, made public notification, and it must be an approved burning day. [1][3]

Smoke Management Program Component	Missoula
	Montana
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Operating agreements have not really been established between the MCCHD and land managers, except what is required by regulations. Open burning sources need not apply for and obtain an air quality open burning permit if the open burning source has obtained a permit from the Montana Department of Environmental Quality pursuant to ARM 17.8.610 and where no other provision of these regulations is violated. A permit issued by the Montana Department of Environmental Quality to burn, pursuant to ARM 17.8.610, will be valid in Missoula County only when the Montana State Airshed Group monitoring unit is in operation. Open burning sources issued a permit pursuant to ARM 17.8.610 shall be required to obtain an air quality open burning permit from the MCCHD when the Montana State Airshed Group monitoring unit is not in operation. [1][4] • The Agreement states that the MCCHD and other signatories will conduct training sessions for permit issuance. [2] • Each year the MCCHD offers training to the firefighters issuing the burn permits. While it covers some basic air quality and smoke concerns, it cannot really be termed smoke management training. The US Forest Service offers an excellent class on smoke management which many agencies have taken advantage of. [4]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • One BACT method is to promote alternative treatments and uses of materials to be burned. [1] • The Air Quality Advisory Council (a citizen's board that advises the Missoula City-County Air Pollution Control Board) is currently investigating limiting yard waste burning in the County. Burning is already very limited in the Missoula city limits. [4] • In those areas where burning is allowed, there are no real disincentives to burning or incentives to do something else. [4] • Emission reductions are not tracked. [4]

Smoke Management Program Component	Missoula
	Montana
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Conditional burning, which allows businesses to burn trade wastes and landfills to burn clean wood-wastes, is not permitted within the Air Stagnation Zone, roughly 4.5 miles from the Missoula City limits. [4] • Burn permits may be suspended due to poor air quality. [3] • Burning seasons have been adopted to minimize the impacts of smoke on the public. General burning (only natural vegetation and untreated dimensional lumber generated on the burners property can be burned) is conducted March 1 through August 31. Essential agricultural burning is conducted March 1 through October 31. Wildland burning is conducted March 1 through November 30. [3] • Permits for minor burners require that fires be out by 4 pm. Winds typically come up in the late afternoon and can cause a planned fire to get out of control. Also, smoke disperses better before sunset (Missoula is located in a valley and tends to have nightly temperature inversions that can trap smoke). [4] <p><i>Continued on next page</i></p>
9. <i>Continued</i>	<ul style="list-style-type: none"> • All burners are required to comply with BACT determined on a case-by-case based by the MCCHD. The techniques and methods may include the following: scheduling of burning during periods and seasons of good ventilation, applying dispersion forecasts, utilizing predictive modeling performed by the MCCHD or other public agency to minimize smoke impacts, limiting the amount of burning to be performed during any one time, using burning techniques which minimize smoke production, selecting fuel preparation methods that will minimize dirt and moisture content, promoting fuel configurations which create an adequate air to fuel ratio, prioritizing burns as to air quality impact and assigning control techniques accordingly, and promoting alternative treatments and uses of materials to be burned. For essential agricultural open burning during September or October, or prescribed wildland open burning during September, October, or November, BACT includes burning only during the time periods specified by the MCCHD. For prescribed wildland open burning during December, January or February, BACT includes burning only during the time periods specified by the MCCHD, which may be determined by calling (406) 728-2667. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The BACT methods that the burner must comply with are indicated in the burn permit, but do not have to be documented by the burner. [1][4]

Smoke Management Program Component	Missoula
	Montana
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Written burn plans are required of the major burners. The plans must include a legal description or map, the elevation and average fuel loading of each site to be burned, as well as the method of burned to be used at each site. [4]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • Smoke dispersion conditions are evaluated by the MCCHD and, when it is operating, the meteorologist of the Airshed Group’s monitoring unit. The MCCHD and meteorologist then place restrictions on burning, usually based on elevation in the fall. For example, in Impact Zone M, the area surrounding the city of Missoula, no new fires may be lit below 4500'. The MCCHD relies heavily on current particulate levels and the forecasts of the meteorologist or the National Weather Service. [4] • Missoula County’s rules require the burner to evaluate the dispersion conditions on site. Large burners employ spot weather forecasts to ensure they have good dispersion at their location, especially when they are burning close to town. [4] • Regional haze and visibility impairments can be taken into account by the meteorologist of the Airshed Group’s monitoring unit. However, because of prevailing west winds, Missoula is often subject to haze and smoke from more western burns. Burning is often curtailed in Missoula County because of smoke from fires outside the County and State. [4]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Burns that require public notice before a permit can be issued include major burners, conditional burns, firefighter training, and commercial film production burns. For these burns, the burner must provide proof of publication of public notice to the MCCHD before an application will be considered complete. The burner must notify the public of the application for permit by legal publication, at least once, in a newspaper of general circulation in each airshed (as defined by the MCCHD) affected by the application. The notice must be published no sooner than 10 days prior to submittal of an application and no later than 10 days after submittal of an application. The form of the notice will be provided by the MCCHD and must include a statement that public comments may be submitted to the MCCHD concerning the application within 20 days after publication of notice or filing of the application, whichever is later. A single public notice may be published for multiple applicants. [1][4]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • The MCCHD has the ability to require a fire be extinguished if it is contributing to or will cause a violation of the Montana Ambient Air Quality Standards. Land managers who burn close to the City of Missoula are aware of this potential and scope out ways a fire can be mopped up. However, written contingency plans are not required. [4]

Smoke Management Program Component	Missoula
	Montana
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Air quality impacts of individual fires are not monitored, but the MCCHD continually monitors particulate in Missoula using TEOM and samples PM_{2.5} at several locations in the County. In addition, the MCCHD monitors carbon monoxide from October through March. The County's Emergency Episode Avoidance Plan establishes trigger levels and sets out requirements based on these levels. The department will shut down all outdoor burning if ambient particulate levels reach 80 Fg/m₃, based on an 8-hour average. [4]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The MCFPA makes information on burning permits available on the Internet. [3] • The MCCHD has worked with MCFPA to create informational pamphlets, such as, "It's Fall, Why Can't I Burn?" MCFPA has also created and aired radio spots that explain the limitations of the fall burning season. The MCCHD is in the process of creating a web page that will include permit information and a link to the MCFPA website. Fire departments and the MCCHD routinely get complaints about burning. Missoula County recently made changes to its outdoor burning regulations. These changes went through a great deal of public scrutiny and comment. [4]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Signatories to the Agreement notify the appropriate agency of non-compliance with the outdoor burning regulations including the burning of prohibited materials and conducting outdoor burning without a permit. [2] • Most of the monitoring of compliance is done when complaints are received. The MCCHD, the fire departments, and in some instances, the County Sheriff respond to and investigate the complaints. [4]

Smoke Management Program Component	Missoula
	Montana
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Signatories to the Agreement cooperate in the investigation of complaints concerning illegal outdoor burning including the issuance of verbal and written warnings and preparation of incident reports. [2] • If a fire gets out of control, the burner is liable for fire suppression costs as well as any damage the fire causes to the surrounding community. [3] • In addition to suppression costs, penalties for not having a permit or violating a condition of the permit can be as high as \$10,000 per offense (as per the Missoula City-County Air Pollution Control Program). Fines are typically quite a bit smaller, ranging from around \$500 to \$2000. [4]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • The MCCHD does not require post-burn reports. However, major burners are required to report the amount of fuel burned to the Airshed Group. [4]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The program is in a continual state of review. MCFPA meets every other month, and the burn permit program is always a topic of discussion. In addition, the Air Quality Advisory Council has been discussing outdoor burning for the last year and a half, and is currently focusing on yard waste burning. Missoula is finding that more and more of its air pollution episodes are due to smoke from fires, both prescribed and wildfires, so this program will continue to come under review. [4]
21. What are the review criteria?	<ul style="list-style-type: none"> • There are no specific review criteria, other than the public notice and hearing requirements for any rule changes. [4]
Optional Air Quality Protection	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • There are special protection zones. Impact Zone M includes the area surrounding the Missoula valley and is generally defined by the peaks surrounding the valley. The Airshed Group’s monitoring unit pays more attention to burns planned inside the Impact Zone and requires more details from burners in this area. This area was recently enlarged in Missoula’s air regulations to include more land to the east. The Missoula air regulations only allow prescribed wildland fire in Impact Zone M on days of good dispersion in the fall and do not allow any wintertime burning. Additionally, there are restrictions on what can be burned in the Air Stagnation Zone, which is smaller than Impact Zone M and extends about 4.5 miles outside the city limits of Missoula. [4]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The closest thing Missoula has to performance standards is that the burner has to comply with BACT which is established in the permit. Performance is evaluated on a complaint basis. [4]

Smoke Management Program Component	Missoula
	Montana
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • There are no additional requirements, except that if the burner is not complying with BACT, the permit can be revoked and/or a fine can be imposed by a judge. [4]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Missoula County has a nuisance regulation in its odor rule than can be applied to smoke. The regulation reads, “No person shall cause, suffer or allow any emissions of gases, vapors, or odors beyond his property line in such a manner as to create a public nuisance.” The air regulations have been recently amended (but still must be approved at the state level) to include a general public nuisance regulation that will fit the situation better. Public nuisance is defined by the regulations as, “any condition that endangers safety or health, is offensive to the senses, or obstructs the free use of property so as to interfere with the comfortable enjoyment of life or property by an entire community or neighborhood or by any considerable number of persons.” There is no set number of people that must complain before something can be determined to be a public nuisance, but the MCCHD must investigate it and determine that it meets the criteria. This rule can apply to prescribed fires as well as prescribed natural fires, but would not pertain to wildfires. Last year, the MCCHD determined that prescribed fires had created a public nuisance in the Blackfoot and Missoula valleys but did not pursue the violation in court. [4]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Yes. The Missoula City-County Air Pollution Control Program is part of the SIP. [4]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • There are not fees for small burners and the major burners pay fees directly to the State of Montana to fund the Montana/Idaho Interstate Airshed Management Group. The costs of the permitting program for small burners is absorbed by the MCCHD and the fire departments. [4]

Smoke Management Program Component	Missoula
	Montana
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The state program maintains annual emissions inventories, as that is what the permit fee for major burners is based on. Locally, such inventories are not maintained. [4]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No, not at the local level. [4]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • The local permitting program is approved by the EPA and incorporated into the SIP. Information is not available as to whether the state is planning to certify the Interstate Airshed Management Group with EPA. [4]

Source of summary information:

- [1] Nevada Smoke Management Program, July 6, 1999, at <http://www.state.nv.us/ndep/bao/smoke1.htm>
- [2] Comments received from the Nevada Department of Environmental Protection dated August 4, 2000.

Special Note:

- This survey has been reviewed by the Nevada Department of Environmental Protection. For more information, contact Curtis Payne, NDEP, 333 West Nye Lane, Carson City, NV, 89706.

Smoke Management Program Component	State
	Nevada
Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	• The Nevada Division of Environmental Protection (DEP) has central authority over the smoke management program. The DEP's jurisdiction does not include Washoe or Clark Counties or any Bureau of Indian Affairs (BIA) trust lands. [1]

Smoke Management Program Component	State
	Nevada
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • Program support agreements are formalized under a MOU and an Interagency Agreement (IA) between the DEP and land management agencies. [1] These agreements have not been finalized. [2] • The county commissioners of the various counties are granted the power to regulate excessive emissions of dense smoke within the boundaries of the county. Incorporated cities have the authority to regulate excessive emissions of dense smoke within the city limits. The DEP is required, by statute, to maintain cooperative programs with local governments and facilitate cooperation across jurisdictional lines. Any source of air contamination is required, by statute, to obtain a permit from DEP. [2] • The SMP requires that the local fire protection agency obtain a burn permit to allow public open burning at single family residences within cities and towns listed in the SMP. The fire protection agency must obtain a permit from the county pollution control agency (Clark and Washoe Counties) or the DEP to set fires for training purposes. [2] • The DEP coordinates burns near the state border, BIA trust lands managed under a tribal air quality agency, or the borders of Washoe or Clark Counties with the respective air regulators. A list of the agencies and individuals notified must be included in the burn plans. [2] • A draft MOU between the California Air Resource Board and DEP was prepared in July 1998. The draft MOU coordinates prescribed fire issues near the state borders and monitoring at Lake Tahoe. The MOU was never finalized. Current efforts are directed towards Title 17 implementation of prescribed burn permits. Nevada is requesting that the burn permit application incorporate land management agency notification of adjacent states and regions prior to initiating prescribed burns. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Participation in the smoke management program by land managers is required by regulation. Agriculture is exempt from State open burn regulations except where prohibited by local ordinances or regulations. Local governments must allow for customarily accepted agricultural practices and must consult the Division of Agriculture or local conservation district to determine what these practices are before adopting ordinances which may affect agricultural operations. The State is working with the agricultural community toward developing a voluntary program (Handbook for Agricultural Burning in Nevada). [2] • Each land manager involved in the use of prescribed fire is responsible for proper smoke management for the prescribed fires it conducts. The burner must follow best management practices. [1][2]

Smoke Management Program Component	State
	Nevada
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • Open burning under the SMP may be conducted for the following types of projects: a) Hazard fuel reduction; b) Slash disposal from timber sales and roads constructed within contract areas; c) Wildlife and livestock habitat improvement; d) Forest and rangeland improvement; e) Insect, weed, and disease control; f) Site preparation for revegetation; g) Watershed management and water yield improvement; h) Maintenance and improvement of natural ecosystems; I) Maintenance of threatened and endangered species; j) Other vegetative management and improvement projects; and k) Agricultural practices. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Land managers must obtain a permit from the DEP for all management ignited prescribed fires which emit greater than 1.0 tons of PM10. [1] • For each project emitting between 1.0 and 10 tons of PM10, a one-page permit application form must be completed and submitted to the DEP at least two weeks prior to the planned date of ignition. [1] • For fires emitting more than 10 tons of PM10, a complete application package must be submitted at least 30 days prior to the planned ignition date. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • In reviewing the application for an open burning permit, the DEP will consider the following factors: a) Consideration and evaluation of alternatives to burning; b) Proximity to populated areas and points of nearest public access; c) Climatic conditions on the day or days of burning; d) Potential contribution to area air pollution. • The issuance of a permit does not constitute final approval. Final approval must be obtained 24 hours prior to ignition. Final approval will be based on ambient air quality conditions. [1] • The land manger must contact the DEP no later than 10 a.m. of the business day preceding the burn to receive approval to ignite a prescribed burn. Notifications must be made to the Smoke Management Coordinator at (775) 687-4670, ext. 3083. The DEP will issue a final decision on the same business day. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Program support agreements are formalized under a MOU and an Interagency Agreement between the DEP and land management agencies. [1] These agreements have not been finalized. [2] • All burns conducted by state and federal land managers must be conducted by personnel trained in prescribed fire and smoke management techniques to the minimum level required by the land management agency in charge of the burn. [1] • The local fire management officer of the state or federal land management agency having jurisdiction over the prescribed burn must have had smoke management training obtained through successful completion of a National Wildfire Coordinating Group (or equivalent) course dedicated to smoke management. [1]
<i>Minimizing Air Pollutant Emissions</i>	

Smoke Management Program Component	State
	Nevada
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • In reviewing the application for an open burning permit the DEP will consider several factors including the applicant's consideration and evaluation of alternatives to burning. [1] • A permit will not be issued if this information has not been submitted. [1] • The Smoke Management Plan requires a description of the emission reduction techniques in the annual fire activity report. It does not require calculations of those reductions. [2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Each land manager conducting prescribed burning must implement as many smoke management and emission reduction measures as are feasible for the specific burn. The following smoke management and emission reduction techniques are considered best management practices: 1) Reducing the biomass ; 2) Burning in seasons characterized by meteorological conditions that allow for good smoke dispersion; 3) Using mass ignition techniques; 4) Igniting burns under good-to-excellent ventilation conditions and suspending operations under poor smoke dispersion conditions; 5) Considering smoke impacts on activities conducted by local communities and land users; 6) Burning only those fuels essential to meet resource management objectives; 7) Minimizing duff consumption and smoldering through fuel moisture considerations; 8) Minimizing dirt content when slash piles are constructed; 9) Burning piles when other burns are not feasible, such as in snow or rain; 10) Using all opportunities that meet the burn prescription and all burn locations to spread smoke impacts over a broader time period and geographic area; 11) Burning during optimum mid-day dispersion hours, with all ignitions in a burn unit completed by 3 p.m. to prevent trapping smoke in inversions or diurnal wind flow patterns; 12) Using chunking of piles and other consolidations of burning material to enhance fuel consumption and to minimize smoke production; 13) Implementing maintenance burning in a periodic rotation mimicking natural fire cycles to reduce excessive fuel accumulations and subsequent excessive smoke production through smoldering or wildfire; 14) Managing smoke impacts. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Each land manager conducting prescribed burning must include a description of the emission reduction techniques used for a specific burn in the annual fire activity report submitted. [1] • The information is used to review program effectiveness and is made available to all interested Working Group members. [2]
<i>Smoke Management Components of Burn Plans</i>	

Smoke Management Program Component	State
	Nevada
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • For prescribed fires emitting more than 10 tons of PM10 and located more than 15 miles from a smoke sensitive area, a CO or PM non-attainment area, or a Class I area, the completed application must be accompanied by a burn plan. [1] • The burn plan must include the following: a) The specific location and description of the area to be burned; b) The responsible personnel; c) An emergency telephone number that is answered 24 hours a day; d) The property owner; e) The agency/contractor conducting the burn; f) The burn prescription; g) The number of acres to be burned, the type of fuel, fuel loading estimates and the ignition technique to be used; h) a list of agencies and private parties involved; i) A map depicting the potential impact of smoke; j) Discussion of public notification to be conducted; and k) Evaluation of alternative treatments. [1] • For prescribed fires emitting more than 25 tons of PM10, or more than 10 tons if the burn is within 15 miles of a Class I area, a CO or PM non-attainment area, or other smoke sensitive area, the following information must also be submitted with the burn plan: a) A smoke management plan including actions taken to minimize emissions before, during and after the fire; b) Emission estimates including models, methods, and emission factors used; c) Identification of smoke sensitive areas; d) Safety and contingency plans; e) A list of potential affected air regulators to be notified; and f) Air monitoring to be conducted. [1] • For prescribed fires emitting more than 10 tons of PM10 and are within 15 miles of the state border, BIA trust lands managed under the jurisdiction of a tribal air quality agency, or the borders of Washoe or Clark counties, the air regulators of those areas must be notified prior to the burn and a list of the agencies and individuals to be notified must be included in the burn plans. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • Several smoke management techniques involving smoke dispersion that are considered by the SMP to be best management techniques are listed under question 9 of this survey. [1] • The best management technique of managing smoke impacts includes: a) Limiting smoke impacts to roads, highways, and airports; b) Using appropriate signing if smoke will impact any point of public access; c) Notifying the public at potentially impacted smoke sensitive areas; d) Determining nighttime impacts and taking appropriate precautions. [1] • For projects that will emit more than 25 tons of PM10 or greater than 10 tons of PM10 if located within 15 miles of a Class I area, an area that is in non-attainment for CO or PM, or a smoke sensitive area, a permit applicant must demonstrate that the project will not violate applicable ambient air quality standards. This demonstration will be conducted using currently accepted models. The model output will explicitly show conditions under which the burn will be conducted so as to minimize impacts of emissions. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • For any project generating more than 10 tons of PM10, procedures for notifying the public of burn dates in smoke sensitive areas must be included with the applicant’s burn plan. [1]

Smoke Management Program Component	State
	Nevada
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • In plans for prescribed fires, each land management organization will have contingency plans enabling it to reduce smoke emissions. [1] • Contingency plans will be implemented when meteorological conditions warrant, the DEP, Bureau of Air Quality determines that acceptable limits of smoke accumulation are or will be exceeded, and/or the responsible land management organization anticipates that the prescription for a particular fire will be exceeded. [1]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • For small fires and fires that are remote enough to result in no noticeable impact on the public, visual monitoring of the direction of the plume and monitoring nuisance complaints by the public may be sufficient. [1] • Other monitoring techniques include posting personnel on vulnerable roadways to look for visibility impairment and initiate safety measures for motorists; posting personnel at other smoke sensitive areas to look for smoke intrusions; using aircraft to track the progress of smoke plumes; and continued tracking of meteorological conditions during the fire. [1] • For large fires expected to last more than one day, locating real-time particulate matter monitors at smoke sensitive areas may be warranted. [1] • If pollutant levels are anticipated to create a significant threat to human health, the DEP may require the responsible land management agency to monitor in or near population centers impacted by smoke generated from a particular prescribed fire or wildfire. Impact from wildfire will be monitored by the DEP. [1] • If the responsible land management agency or the DEP determines that the prescription for a prescribed fire has been exceeded and/or conditions of the permit are not being met, the responsible parties must initiate suppression action unless, after consultation with the DEP, the prescription is modified, or other appropriate actions are taken. [1]
Public Education and Awareness	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The State has not developed a public education and awareness program. The State's SMP was developed through the review of the SMPs of other western states and in meetings with land management agencies, local fire protection districts, state agencies, agricultural organizations, the University of Nevada, conservation districts, the Desert Research Institute, and concerned individuals. SMP finalization awaits MOU and IA approval by the land management agencies. [2] • The DEP assessed the magnitude of agricultural burning by distributing questionnaires through the Cattlemen's Association. Currently the agricultural community is exempt from State regulations on open burning; however, the State is attempting to establish a voluntary program. The final draft of the handbook for Agricultural Burning in Nevada is currently under review by the working groups that helped develop it. [2] • The SMP requires periodic review of the MOU and IA to ensure implementation needs are met. [2]

Smoke Management Program Component	State
	Nevada
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • DEP staff are allowed to enter and inspect prescribed burn sites unannounced, before, during, and after burns, to verify the accuracy of the permit information and compliance with the burn plan and smoke management plan, if appropriate. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Failure to comply with the procedures and conditions specified in the permit may result in enforcement action. Penalties of up to \$10,000 per day per violation may be assessed. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Each permitted user of prescribed fire who emits more than 10 tons of PM10 per year must provide the DEP with an annual reporting of fire activity by March 31 for the previous year's activities. Information to be reported includes: the permit number, the name of the individual conducting the burn or the agency name and contact, date and time ignition began, date and time the fire is declared out, actual acreage burned, fuel type, fuel loading, emissions estimates, emission factors used and their source, name of air quality regulators notified and the notification date, and the emission reduction techniques used. [1] • The land manager in whose jurisdiction a naturally ignited prescribed fire or wildfire occurs must report all such fires when it is expected to attain a size greater than 300 acres for rangeland and 100 acres for forest land on a daily basis to the DEP. [1]

Smoke Management Program Component	State
	Nevada
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Nevada’s Smoke Management Plan requires annual reporting for all organizations that emit more than 10 tons of PM10. The Plan calls for land managers and air regulators to work together to assess program implementation and provide support. These are formalized under the MOU and an IA between the DEP and land management agencies. The agreement is evaluated periodically to ensure implementation needs are met. The MOU and IA, providing support for the Smoke Management Plan, have not been approved. [2]
21. What are the review criteria?	<ul style="list-style-type: none"> • No review criteria for the smoke management plan has been established. [2]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The SMP does not establish specific “special protection zones”. It does provide additional protection to Class I areas, areas in non-attainment and areas defined as smoke sensitive areas. The smoke sensitive areas are defined as: those designated as scenic and/or important views, especially during times of significant visitor use; urban and rural population centers; homes, schools, hospitals, nursing homes, airports, recreational areas; and other locations that may be sensitive to smoke impacts for health, safety, and/or aesthetic reasons. [2] • A permit applicant must demonstrate that the project will not violate applicable ambient air quality standards. This demonstration will be conducted using currently accepted models. The model output will explicitly show conditions under which the burn will be conducted so as to minimize impacts of emissions. [2]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The burn plan itself is a performance standard. [2] • Factors the Division will consider include: modeled data that indicates expected violations of any Ambient Air Quality Standard; air quality monitoring data that indicates a violation of Ambient Air Quality Standards; proximity of the fire to smoke sensitive areas; citizen complaints; National Weather Service Fire Weather Forecast predictions; fuel conditions; existing and predicted size of the fire. [2] • Performance is evaluated on a case-by-case basis. [2]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • If the prescription is exceeded (including impacts on visibility), and/or conditions of the permit are not being met, the responsible parties must take immediate action to reduce further impacts and consult the Division. These actions may include suppression, prescription modification (after consultation with the Division) or other appropriate action. [2] • Failure to comply with the procedures and conditions specified in the permit may result in the permit being revoked or other enforcement actions. [2] • Penalties of up to \$10,000 per day per violation may be assessed. [2]

Smoke Management Program Component	State
	Nevada
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Nuisance is defined under odors as anything which is injurious to health or offensive to the senses. Per regulation, a controlled fire does not constitute a nuisance if a written plan is approved by DEP, the plan complies with air pollution regulations and is under the direct supervision of qualified personnel. [2] • A controlled fire is defined as the controlled application of fire to natural vegetation under specified conditions and after precautionary actions have been taken to ensure that the fire is confined to a predetermined area. [2] • DEP must investigate odor complaints when 30 percent or more of a sample of the people exposed believe it to be objectionable. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Burns are excluded in the SIP. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Currently funding for the program is provided by the Clean Air Act. If the MOU and IA with the various land management agencies is finalized, minimal funding will be provided by the land management agencies involved. [2] • There are no fees. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Each land manager conducting prescribed burning must include the emissions estimates, emission factors used and their source, and the emission reduction techniques used for a specific burn in the annual fire activity report submitted. [1] • The emissions inventory is made available to all interested Working Group members. [1]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • The Smoke Management Plan requires a description of the emission reduction techniques in the annual fire activity report. It does not require calculations of those reductions. [2]

Smoke Management Program Component	State
	Nevada
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • The EPA has reviewed the SMP for Nevada and found it acceptable. The State does not plan to certify the SMP. Washoe and Clark Counties have expressed an interest in using the State's SMP and may seek certification. [2]

Source of summary information:

- [1] New Mexico Smoke Management Memorandum of Understanding 1997 - 2002.
The New Mexico Smoke Management Memorandum of Understanding includes: the New Mexico Smoke Management Plan, Fire Activity Report Forms A, B. and C, a Burn Accomplishment Evaluation Form, Emissions Calculation Forms for PM-2.5, PM-10, TOP, and VOC., a Permit Application and Reporting of Open Burning Form, a map of existing fire management zones in New Mexico, and a map of airsheds in New Mexico.
- [2] New Mexico State Regulations Title 20 (Environmental Protection), Chapter 2 (Air Quality), Part 60 (Open Burning). November 30, 1995.
- [3] Standard condition of approval on permit; Vickie Komie, NM Environment Department, October 23, 2000.
- [4] Discretion of NMED to add a condition of approval when warranted; Vickie Komie, NM Environment Department, October 23, 2000.
- [5] Comments by Vickie Komie, NM Environment Department, October 23, 2000.

Special Note:

- This survey was reviewed by the New Mexico Environment Department. For more information, contact Vince Vigil or Vicky Komie, NMED, 1190 St. Francis Drive, Santa Fe, NM, 87502-0110.

Smoke Management Program Component	State
	New Mexico
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The New Mexico Environment Department (NMED) approves or disapproves permit applications. [1] [2].• The agency with the approved permit makes the final decision of when to burn and notifies NMED 24 hours prior to ignition of the burn. [3]• In some cases, a permit condition of approval restricts the dates of burning, such as during the balloon fiesta or other event that may be impacted by the burn. [4]

Smoke Management Program Component	State
	New Mexico
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The NMED, the USDA Regional Forester, the USDI Intermountain Region National Park Service, the BLM, New Mexico, the USDI Regional Fish and Wildlife Service, and the New Mexico Dept. Of Energy, Minerals and Natural Resources have signed a Memorandum of Understanding (MOU) that is the basis for the Smoke Management Plan (SMP). [1] • Signatories to the MOU must notify the appropriate local agencies as required in their burn plan of intent to burn and the location of each burn. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The signatories of the MOU agree to abide with the New Mexico SMP, which includes ensuring proper smoke management of prescribed fires conducted by the signatories. [1] However, there is some difference of opinion as to whether the MOU is legally enforceable. [5] • Most other open burning requires a permit and approval to burn from the NMED. [2]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • Acceptable burning projects within the MOU are: (1) Hazardous fuel reduction, (2) Slash disposal from timber sales and roads constructed within contract areas, (3) Wildlife habitat improvement, (4) Forest stand improvement, (5) Insect and disease control, (6) Site preparation for revegetation, (7) Water yield improvement, (8) Maintenance of natural ecosystems, (9) Maintenance of threatened and endangered species, (10) Other vegetative management improvement projects, and (11) Cultural scene maintenance. [1] • State regulations allow burning of fully dried tumbleweeds and burning for agricultural management, excluding timber, directly related to the growing or harvesting of crops. [2] • Other open burning is permitted for the following purposes when a permit is obtained from the NMED: (1) Weed Abatement, (2) Prevention of fire hazards, (3) Disposal of dangerous materials, (4) Instruction and training of fire fighting and fire rescue personnel, (5) Civil defense, (6) Conservation, (7) Game management, (8) Disease and pest control, (9) Land clearance for highway construction, (10) Forestry management, (11) Control of vegetation in irrigation ditches and canals, (12) Clearance and maintenance of watercourses and flood control channels to eliminate flood hazards, (13) Disposal of hydrocarbons spilled or lost from pipeline breaks or other transport failure, and (14) Other special circumstances. [2] • The NMED is prohibited by state regulation from requiring permits for agricultural burning. [1]

Smoke Management Program Component	State
	New Mexico
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Within the MOU, for planned ignition prescribed fire, an annual application for an annual permit for all burns planned from January 1 through December 31, must be submitted to the NMED office in Santa Fe. The NMED, after review, will inform the applicant that the permit is approved, approved with conditions, or denied within 35 days after receipt of a complete application. [1] • Within the MOU, for prescribed natural fire, application for burns are made on an annual basis. An operating plan including the prescription and map showing the area for the prescribed natural fire is included with each initial application. The application is reviewed and approved, approved with conditions, or denied. Subsequent annual applications for approved areas need not include plan and maps but only minor necessary changes for that area and the permit application form. [1] • Burn projects not covered by the MOU or not considered part of forest and public land management projects must submit an application for a burn permit for a specific project to the local NMED district office. The NMED will process the application within 20 days. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • For planned ignition prescribed fire within the MOU, land managers must have a valid annual permit, there must not exist any practical alternative to burning, managers must select appropriate smoke management techniques, each manager must use the best meteorological information to assure burning during conditions of at least “good” smoke dispersal, the permittee must notify the appropriate local agencies as required, the NMED, and managers must consider potential visibility impacts of smoke. [1] • For prescribed natural fire within the MOU, land managers must have a valid annual permit and the manager must telephone the Air Quality Bureau Enforcement Section to report fires that exceed ten acres. [1] • For projects not covered by the MOU or not considered part of forest and public land management projects, the burner must have a permit to open burn, there must not exist any practical alternative to burning, the health or welfare of any person must not be detrimentally affected, and the ambient air quality of other property must not be detrimentally affected. [2]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • A MOU exists between the NMED and large land managers in which the signatories agree to the SMP. [1] • The land management agencies and the NMED develop, exchange, and present interagency training as resources allow to promote understanding of the regulatory context and effects of fire ecology and smoke management. The responsible parties are the Southwest Area Fire Training Committee and the NMED Air Quality Bureau. [1]

Smoke Management Program Component	State
	New Mexico
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Although specific alternatives are not discussed, the signatories of the MOU must consider practical alternatives to burning and may conduct prescribed burning only if there are no practical alternatives. [1] • The NMED reserves the right to deny a permit for any type of burning for which there appears to be a reasonable alternative to burning. [1][2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Each signatory to the MOU is responsible for proper smoke management for the prescribed fires it conducts and, on a case-by-case basis, identifies and implements the best smoke management techniques appropriate to minimize the amount and /or impact of smoke produced. For prescribed natural fire, the responsible parties must promptly initiate appropriate suppression action if the conditions of the permit are not being met. Potential visibility impacts of smoke must be considered and factored into the prescription for the burn. Piled material must be cured and as free of dirt as possible. To the degree practical, all burning must be done during periods conducive to smoke dispersal, to be determined by using the best meteorological information reasonably available. Other conditions required for smoke management may be added to the permit if deemed necessary. [1] • Other open burning must be maintained under the following conditions: no natural or synthetic rubber or petroleum products may be burned, care must be taken to minimize the amount of dirt on the material being burned, all burning, except agricultural burning, must take place between the hours of 10 a.m. and 4 p.m., and the material to be burned must be as dry as possible. [2]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • A smoke management plan identifying sensitive receptors and the measures planned to minimize and mitigate impacts to those receptors must be included in the permit application to NMED. The information provided is reviewed for adequacy and completeness prior to issuance of permit. [5]

Smoke Management Program Component	State
	New Mexico
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • The MOU does not specifically discuss written burn plans; however, signatories are required to apply for an annual permit and received approval. The permit application requests the following information: (1) Organization, contact name and telephone number, (2) Location, acreage, fuel loading determination method, type of fuel and number of tons/acres to be burned, (3) If smoke sensitive areas will be affected, and if so, a map of the smoke sensitive areas including distance and direction. [1] • The NMED is instituting standardized burn plan and smoke management plan forms in order to more readily evaluate applications for conformance with Federal Air Quality Standards and minimizing smoke impacts to sensitive receptors. [5] • For other open burning, the regulations do not discuss written burn plans; however, the person seeking to open burn must request a permit from the NMED in writing. The request must include the following information: (1) The requestor's name, address, and telephone number, (2) The location where the burning is to be conducted, (3) The type and quantity of material to be burned, (4) The date when the burning is to be conducted, (5) The methods that will be followed to ignite, maintain and control the burning, (6) The reasons why the requestor believes the burning is necessary, and (7) The alternatives to burning and the reasons why the requestor believes them not be feasible. [2]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Each signatory to the MOU must use the meteorological information produced by the National Weather Service Fire Weather Forecaster before burning. For planned ignitions, a single test fire may first be ignited to indicate local mixing depths. [1] • For other burning, the regulations do not discuss how smoke dispersion conditions must be evaluated; however, the wind direction at the site of agricultural burning must be such that the smoke will generally be carried away from areas of human habitation. [2] • In a prescribed fire plan, visibility in smoke sensitive areas must be identified and smoke management techniques applied both in planning and implementation to minimize smoke impacts. [1] • Regional Haze and other visibility impairments, excepting impacts on roadways and airports, have yet to be addressed in a comprehensive way. [5]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Signatories to the MOU must ensure that public notification plans are developed and implemented for each prescribed fire activity. In addition, signatories must notify the appropriate local agencies as required in their burn plan of intent to burn and the location of each burn. [1] • For other burning, the regulations do not discuss if the public must be notified when fires are authorized. [2]

Smoke Management Program Component	State
	New Mexico
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Signatories to the MOU must have a prescribed fire contingency plan in place that will identify how the organization will reduce fire emissions, eliminate ignitions in certain areas, or take appropriate suppression action. The contingency plans will be implemented when meteorological conditions warrant, or the NMED determines that National or State Air Quality Standards are or will be exceeded, and/or the responsible land management organization anticipates that the prescription for a particular fire will be exceeded. [1] • The new SMP forms explicitly require contingency plans for each burn. For other open burning, the regulations do not discuss if contingency plans are required. [2]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • If pollutant levels are anticipated to exceed National or State Ambient Air Quality Standards, air quality control regulations, or significantly impact visibility, the NMED may require the responsible land management agency to monitor and/or model pollutants generated from a particular prescribed fire or wildfire. The NMED may assist in identification of instrumentation, site selection, installation of instrumentation, operation, calibration, quality assurance, quality control, laboratory analysis, data interpretation, and supplies. [1] • For other open burning, the regulations do not discuss if monitoring is required. [2]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The MOU states that Fire Managers, Public Information Officers, and other Agency individuals contacting the public will know details about the prescribed burning program, project(s), and objectives of the burn. Prescribed Fire handouts and other developed educational material can enhance the process. [1]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Within the MOU, all prescribed burning operations are subject to inspection by the NMED. The determination of compliance with air quality standards is the responsibility of the NMED and is determined through modeling, emissions inventories, and air quality monitoring. [1]

Smoke Management Program Component	State
	New Mexico
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • If at any time the NMED determines that any condition of the permit is not being complied with, the permit may be revoked for the specific project where the non-compliance is occurring. In addition to revocation of the permit, the NMED may take any other enforcement action authorized under State or Federal statutes, rules and regulations. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Within the MOU, as a condition of the permit, the actual activity that occurred with each permitted burn must be reported to the NMED. Each permitted user of prescribed fire provides the NMED with an annual reporting of fire activity (by using Fire Activity Report Forms A, B, and C attached to the MOU) by March 1 for the previous calendar year's activities. [1] • The Fire Activity Report needs to demonstrate where, when, and how much fuel was burned; what types of fuel were burned; and how the emissions from the burn were determined. The Fire Activity Report must also include location, time, fuel types, (vegetative type, piles or in-situ, etc.), fuel loading (e.g., tons per acre, pile weights), number of acres or piles burned, emission calculated (pounds per ton, acre, or burn), emission rates (e.g., pounds per minute, ton per hour), and the emission factors used in the calculations. [1] • Upon request, the responsible land management agency must furnish to the NMED within 90 days a fire activity report for a particular prescribed fire or wildfire. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The MOU signatories agree to meet annually during the second week of January to update maps and contact persons, to evaluate the prescribed fire program and the permitting and data collection system in New Mexico, and review and modify the New Mexico Smoke Management Plan where necessary. [1]
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	State
	New Mexico
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Within the MOU, smoke sensitive areas are described as including but not limited to Class I areas as well as other scenic and important views, especially during times of significant visitor use, urban and rural population centers, schools, hospitals, nursing homes, transportation facilities such as roads and airports, recreational areas, and other locations that may be sensitive to smoke impacts for health, safety, scientific, or aesthetic reasons. [1] • Each signatory to the MOU must explicitly consider potential visibility impacts of smoke in Class I areas and other smoke sensitive areas. Each signatory must minimize smoke impacts through application of appropriate smoke management techniques including scheduling burns outside times of significant visitor use and employment of alternatives to prescribed burning to the extent they are environmentally acceptable, technologically feasible and economically reasonable. [1] • Smoke sensitive areas that are scenic and/or important views are identified in zone management plans. Zone smoke management plans are coordinated by each Zone Board. [1] • For other open burning, the emission of smoke must not be allowed to pass onto or across a public road or landing strip such that a hazard is created by impairment of visibility, and the wind direction at the site of agricultural burning must be such that the smoke will generally be carried away from areas of human habitation. [2]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The MOU identifies six objectives: (1) To minimize the generation and/or impacts of smoke in New Mexico when prescribed burning is necessary, particularly in smoke sensitive areas and in important views in Class I areas, (2) To encourage, consider, and use alternative treatments when they are ecologically beneficial, technologically feasible, and economically reasonable, (3) To assure that the New Mexico Ambient Air Quality Standards and air quality control regulations are not violated., (4) To develop and implement an interagency system among land management agencies to monitor and inventory emissions from prescribed fires and wildfires, (5) To cooperate in developing, exchanging and presenting training for employees to promote their understanding of smoke management, fire ecology, and regulatory requirements, and (6) To establish and maintain communication and information exchange among all agencies with responsibilities for smoke management on prescribed fires. [1]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	State
	New Mexico
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Information not provided.
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Information not provided.
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • The program budget of the Air Quality Bureau funds the State smoke management program in the form of salary for personnel to evaluate applications, issue permits and track the burns. No fees are charged to the applicants for permits or approved burns. [5]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Combined with appropriate emission factors for each vegetative type indicated, the information from annual reporting and Summary of Burn Accomplishment Evaluations allow the NMED to have an emission inventory for VOC's, TSP, PM₁₀, PM_{2.5}, and visibility impacts due to fire. [1] • To develop the emission inventory, the fire activity report provided by land management agencies needs to demonstrate where, when, and how much fuel was burned; what types of fuel were burned; and how the emissions from the burn were determined. The Fire Activity Report must also include location, time, fuel types, (vegetative type, piles or in-situ, etc.), fuel loading (e.g., tons per acre, pile weights), number of acres or piles burned, emission calculated (pounds per ton, acre, or burn), emission rates (e.g., pounds per minute, ton per hour), and the emission factors used in the calculations. [1] • Although required by the MOU, the post-burn fire activity reports are rarely submitted by the agencies. At this time the NMED does not have a comprehensive emission inventory. Measures to correct this lack will be taken soon by notifying each agency of the need to fulfill the requirement for submittal of emission reports. [5]

Smoke Management Program Component	State
	New Mexico
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No mechanism is specified to evaluate reductions in potential emissions based on alternatives to burning, thinning or burn techniques. [5]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Plans to create new regulations regarding prescribed burning are now pending. These regulations will take precedence over the MOU now in effect. [5]

Source of summary information:

- [1] Title 20, Chapter 11, Part 21-Open Burning. Effective date December 1, 1995.
- [2] Application for an Open Burn/Open Detonation Permit Form. Environmental Health Department, Air Pollution Control Division.
- [3] Comments received from Mark Dear, R.A., Compliance Supervisor, Air Quality Services, Environmental Health Department, Bernalillo County, NM, October 10, 2000.

Special Note:

- This survey was reviewed by the City of Albuquerque/Bernalillo County Environmental Health Department. For more information, contact Mark Dear or Angel Martinez, EHD, P.O. Box 1293, Albuquerque, NM, 87103.

Smoke Management Program Component	Bernalillo County
	New Mexico
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Albuquerque Environmental Health Department (AEHD), along with the Bernalillo County Fire Department, decides whether or not burning is allowed for any given period of time, based on both climatological information and safety precautions. The decisions are made separately, so anyone who wishes to burn must have approval from both organizations. [3] • The AEHD evaluates applications and grants, grants with additional conditions, or denies, multiple and single event open burning permits. [1] • The Air Quality Division (Division) of the AEHD has the regulatory authority. [3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • At this time there is no regional coordination. The Division's jurisdiction extends throughout Bernalillo County, but does not include Indian lands. There are currently no MOUs in place. [3]

Smoke Management Program Component	Bernalillo County
	New Mexico
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • There is no SMP at this time. [3] • Permits are issued based on the best interest of the local community consistent with the Board's goal of eliminating burning that is environmentally non-essential. [1] • Burners must comply with the Open Burning Regulations and any additional conditions the AEHD decides are necessary. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The Regulation covers a number of different types of burning including burning for timber and forest management and commercial agricultural burning (means the burning of crop residues for field preparation or that is otherwise necessary for the production of a crop that is sold by or used as feed in a registered agricultural business). [1] • Burning for the removal of dead and dry tumbleweed does not require a permit but the burn must take place during specified times (11 a.m. to 3 p.m. and during October thru March 6 a.m. to 5 p.m.) and the staff engineer or the environmental health specialist of the AEHD must be notified at least 24 hours prior to the planned burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Burners must submit an Application for an Open Burning Permit at least 24 hours in advance of a single event (the Application for an Open Burning Permit form asks burners to allow at least one week for processing.). Single event permits are required for timber and forest management and commercial agricultural burns of 1/4 acre or more. [1][2]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The AEHD must approve the application and issue a permit and the burner must comply with all conditions of the permit. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The permits serve as agreements between the Division and other agencies, both governmental and private. There is not SMP. [3]

Smoke Management Program Component	Bernalillo County
	New Mexico
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The Application for an Open Burning Permit form asks the burner to state the alternatives to burning that were considered and the reason why they were not chosen instead of burning. [1][2] • Emission reductions are not tracked. [3]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The AEHD considers anticipated atmospheric conditions before issuing a permit. The AEHD Director has the authority to suspend any open burning in the event of current or prospective violations of the ambient air standards. Open burning is suspended during declared “No burn periods” of the winter pollution advisory. [1] • Permit conditions establish the minimization required by the Division. [3]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • If it is part of a permit condition. The information is used for establishing both yearly emission levels (Title V Operating or Authority to Construct) and for emissions inventories. [3]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Burners must submit an Application for an Open Burning Permit form. The burner must provide the following information: the burner’s name, address, and telephone number; location where burning is to be conducted; type and quantity of ignitable material and fuel; date(s) when the burning is to be conducted; or estimated number, character, and schedule of fires to be conducted; general description of method to ignite, maintain, control and terminate the burning; reasons why the requestor believes the burning is necessary; and what alternatives to burning have been considered and why they were not chosen instead of burning. For multiple event permits - the number and character of similar fires conducted during the previous permit cycle for which renewed approval is sought. [1] • Additional information required varies according to the request. [3] • Once the permit is approved, any need to deviate from it must be reported to and approved by the AEHD in order to maintain the validity of the permit. [1]

Smoke Management Program Component	Bernalillo County
	New Mexico
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • These items are considered, but are not officially established. [3]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • No, not at this time. [3]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Such needs are established in the permit, if it is deemed necessary. [3] • Burners are required to provide a general description of methods to control and terminate the burning in the Application form. [1]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Monitoring can be required by permit, but generally it is not. [3]
<i>Public Education and Awareness</i>	

Smoke Management Program Component	Bernalillo County
	New Mexico
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The public is aware of who to contact for obtaining burning permits, and the phone numbers are advertised on radio and television. There is not an outreach program specifically designated for SMP support. [3]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • There is no SMP. [3]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Any permit may be revoked if the burner fails to comply with the permit provisions. [1] • Authorized penalties for non-compliance include federal penalties (\$15,000 per day, per violation) or civil, including injunctions, or citations through Metro Court (\$50 to \$2000). [3]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Post burn reports generally are not required, but in some cases they are required by permit. [3]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • No. [3]
21. What are the review criteria?	<ul style="list-style-type: none"> • Not applicable.
<i>Optional Air Quality Protection</i>	

Smoke Management Program Component	Bernalillo County
	New Mexico
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • There are no special protection zones, other than common sense in regards to each permit. [3]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • There are no performance standards. [3]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Not applicable.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • There are no applicable “nuisance” regulations. Complaints and problems are handled on a case-by-case basis. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Not at this time. [3]

Smoke Management Program Component	Bernalillo County
	New Mexico
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • There are no fees for burn permits at this time. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Emissions from burning are considered when the source holds a federally enforceable permit, or when such information is required for an emissions inventory. Such inventories are based on post-burn reports when available, or on the original application, or by personal contact. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No. [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • There is no SMP. [3]

Source of summary information:

- [1] Smoke Management Guidelines. North Carolina Division of Forest Resources. February 8, 1988.
- [2] North Carolina Air Quality Rule, 15A NCAC 2D .1900, Open Burning of Combustible Materials.
- [3] Protection and Development of Forests; Fire Control, North Carolina G.S. 113-60.21 – 113.60.41.
- [4] Comments received from the North Carolina Department of Environment and Natural Resources, Division of Forest Resources dated August 19, 1999.

Smoke Management Program Component	State
	North Carolina
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> The North Carolina Division of Forest Resources (DFR) has to authority to issue or deny permits for open burning in or adjacent to woodlands. The DFR makes the burn/no burn decision. [2]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> Inquiries, requests and plans are handled by the appropriate Department of Environmental, Health, and Natural Resources regional office. [2] The Western North Carolina Regional Air Pollution Control Agency, the Forsyth County Environmental Affairs Department, and the Mecklenburg County Department of Environmental Affairs enforce open burning rules as part of their local air pollution programs. [2] Fires set to agricultural lands for disease and pest control and fires set for other agricultural or apicultural practices must be acceptable to the Department of Agriculture. [2] Fires set for wildlife management practices must be acceptable to the Wildlife Management Commission. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> The Smoke Management Guidelines of the NC DFR are voluntary for the forestry community. The system is not applied to any burning other than forestry burning. [4]

Smoke Management Program Component	State
	North Carolina
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The guidelines focus on prescribed fire for forest management. [1] • The regulations apply to all operations involving open burning and the authority of the DFR to issue or deny permits for open burning in or adjacent to woodlands. [2][3] • The DFR's burning laws are designed primarily to prevent forest fires. [4]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • On the day of the burn, the manager must obtain a burning permit, notify the North Carolina Forestry Service office, and provide details on: (1) Total acres to be burned, (2) Fuel tonnages from the tables located in the guidelines, (3) Name of the burning boss, (4) BSP, location, (5) Time of ignition, and (6) Purpose of the burn. [1] • Permits must be issued in the name of the person undertaking the burning and must specify the area in which the burning is to occur, the type and amount of material to be burned, the duration of the permit, and other such factors as are necessary to identify the burning which is allowed under the permit. [3] • Prior to conducting a prescribed burning, the landowner must obtain a prescription prepared by a certified prescribed burner and filed with the DFR. [3] • The DFR law allows the DFR to stop issuance of permits but the DAQ must declare that an air pollution episode exists. [4]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • A permit must be obtained in non-high hazard counties to burn any material in any woodland under the protection of the DENR or within 500 feet of any such woodland during the hours starting at midnight and ending at 4:00pm. A permit must also be obtained for high hazard counties. [3] • Several types of open burning are permissible without a permit under certain conditions. [2] • No fires may be started or vegetation added to existing fires when the DFR has banned burning for an area. [2] • The burn must not violate any local government ordinances. [2]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Although the DFR coordinates with other state and local agencies, neither the guidelines nor the regulations discuss any formal operating agreements that have been established between the DFR and large land managers. • Burners that have the potential to burn 15,000 tons of material or more per year may be subject to Section 15ANCAC 2Q .0500, Title V Procedures. [2] • Burners that burn 38,000 tons per year or more may be subject to 15A NCAC 2D .0530, Prevention of Significant Deterioration. [2] • Prescribed burning must be conducted by a certified prescribed burner in accordance with the burn prescription. A landowner may conduct a prescribed burn without being a certified prescribed burner if the landowner is burning a tract of forest land of 50 acres or less and follows the prescription prepared by a certified prescribed burner. [3]

Smoke Management Program Component	State
	North Carolina
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> For fires set for the disposal of material generated as a result of a natural disaster, the burner must document to the Division of Environmental Management regional office supervisor that there is not any other practical method of disposal of the waste. [2]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> The amount of dirt or organic soil on or in the material to be burned must be minimized and the material arranged in a way suitable to facilitate rapid burning. [3] Heavy oils, asphaltic material, or items containing natural or synthetic rubber may not be used to ignite the material to be burned or to promote the burning of such material. [3]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> Information not provided.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> While the guidelines state that burners should “review burning plan for necessary parameters”, no further details are provided in either the guidelines or the regulations to determine if written burn plans are required. [1] Prior to conducting a prescribed burning, the landowner must obtain a prescription prepared by a certified prescribed burner and filed with the DFR. The prescription must include: 1) the landowner’s name and address; 2) a description of the area to be burned; 3) a map of the area to be burned; 4) an estimate in tons of the fuel located on the area; 5) objectives of the prescribed burning; 6) a list of the acceptable weather conditions sufficient to minimize the likelihood of smoke damage and fire escaping onto adjacent areas; 7) the name of the certified prescribed burner; 8) a summary of the methods to be used to start, control, and extinguish the burn; 9) provision for reasonable notice to be provided to nearby homes and businesses. [3]

Smoke Management Program Component	State
	North Carolina
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Smoke dispersion is evaluated through the dispersion information provided for each category day. The category day must be appropriate for the particular burn. Burners must obtain the category day, a scale of 1 to 5, from the Forest Service. Based on the category day, burners may proceed with the burn, may proceed with limitations, or may not be allowed to burn. [1] • Each category day has an allowable tonnage of fuel that may be burned per 16,000 acres based on the downwind distance to smoke sensitive areas. [1] • The guidelines ask burners to anticipate their timing of future burning by tracking weather observations from NCFS weather, NOAA weather radio, and local sources. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Neither the guidelines nor the regulations specify if the affected public must be notified when fires are authorized. The rules for high hazard counties do state that permission to burn must be granted by the occupants of a dwelling in a residential area within 1,000 feet of the open burning location. [3]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Information not provided.
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The regulations state that operators of air curtain burners must be certified to read visible emissions and the facility must be tested for visible emissions. No other information regarding monitoring of the air quality impacts of fires is discussed in either the guidelines or the regulations. [2]

Smoke Management Program Component	State
	North Carolina
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Neither the guidelines nor the regulations specify if a public education and awareness program has been established. • Air quality rules are listed on the back of the permit as a public service. [4]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • When organic material is ignited during prescribed burning activities, and the material continues to burn, a daily evaluation must be made to (1) estimate the acres continuing to burn within a given 16,000 acre block, and (2) approximate daily tonnage that will be consumed. (It is not clear how these activities are inspected). [1] • Any forest ranger may direct the person responsible for setting a fire to extinguish the fire or take other action if the fire has: (a) been set without a permit and in an area in which permits are prohibited; (b) been set without a permit and determined by the forest ranger that a permit would not have been issued for the fire; (c) deviated from the conditions of the permit. [3]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Any person in violation of the regulations or of any permit issued under authority of the regulations shall be guilty of a Class 3 misdemeanor. [3]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Information not provided.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Information not provided.
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.
<i>Optional Air Quality Protection</i>	

Smoke Management Program Component	State
	North Carolina
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • There are eighteen North Carolina counties that are classified as high hazard counties. [1] • It is unlawful to burn in any woodland under protection of the DENR or within 500 feet of any such woodland without a permit in high hazard counties. [1] • It is also unlawful in high hazard counties to burn any debris, stumps, brush or other flammable materials resulting from ground clearing activities without a permit. Ground clearing greater than five acres require a special permit. The following are also required: (1) Prevailing winds at the time of ignition must be away from populated areas; (2) The location of the burning must be at least 1,000 feet from any dwelling in a residential area unless permission is granted; (3) The amount of dirt or organic soil in the material to be burned must be minimized; (4) Burning may not be initiated when a forest ranger determines that stagnant air conditions or inversions exist; (5) Heavy oils, asphaltic materials, or items containing natural or synthetic rubber may not be used for burning; (6) Initial burning may only be between 9:00 am and 3:00 pm and no combustible material may be added to the fire between 3:00 pm and 9:00 am except when authorized by any forest ranger. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Information not provided.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Information not provided.
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	State
	North Carolina
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Information not provided.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Information not provided.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Information not provided.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Information not provided.

Source of summary information:

- [1] Section 3D.1900 Open Burning - Forsyth County Air Quality Technical Code. Available at <http://www.co.forsyth.nc.us/EnvAffairs/burn/3D1900.htm>.
- [2] Forsythe County Environmental Affairs Department Open Burning Guidelines web site available at <http://www.co.forsyth.nc.us/EnvAffairs/burn>.
- [3] Personal communication between Eddie LeRoy (Forsyth County Forester, 336-767-7269) and Barbara Bauer (EC/R Incorporated, 919-933-9501) on June 5, 2000.
- [4] Comments received from the Forsythe County Environmental Affairs Department on July 25, 2000.
- [5] Comments received from the Forsythe County Environmental Affairs Department on October 12, 2000.

Special Note:

- This survey was reviewed by the North Carolina Forest Service and the Forsyth County Environmental Affairs Department. For more information, contact Eddie LeRoy, Forsyth County Forester, NCFS, 1450 Fairchild Drive, Winston-Salem, NC, 27105, or Janice Sims, Forsyth County EAD, 537 N. Spruce Street, Winston-Salem, NC, 27101-1362.

Smoke Management Program Component	Forsyth County
	North Carolina
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	• The Division of Forest Resources has the authority to issue or deny permits for open burning in or adjacent to woodlands. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	• The Forsyth County Environmental Affairs Dept. (FCEAD) coordinates with the Division of Forest Resources to be sure that the burning falls under acceptable burning practices as described by either agency. [4]

Smoke Management Program Component	Forsyth County
	North Carolina
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Not applicable. [5]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The regulations discuss all types of open burning including forest management, agricultural and wildlife management burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • For wildland burning, a permit must be issued from the County Forester. [3]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • For wildland burning, a permit must be issued from the County Forester. [3] • No burning is allowed for anyone when a burn ban is in effect [2] • Burning is discourage during code “orange” or code “red” ozone days. [2]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Not applicable. [5]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • None. [5]

Smoke Management Program Component	Forsyth County
	North Carolina
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	• None. [5]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	• Not applicable. [5]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	• No. Not applicable. [5]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	• Smoke dispersion conditions are not evaluated. We do not account for visibility or regional haze in our smoke management program or burn/no burn decisions. [5]
13. Must the affected public be notified of planned fires? Please describe.	• Not applicable. [5]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	• Not applicable. [5]

Smoke Management Program Component	Forsyth County
	North Carolina
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • No. [5]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The Forsyth County open burning regulation (Section 3D.1900) and general information on open burning is available at http://www.co.forsyth.nc.us/EnvAffairs/burn. [2] • The FCEAD has on going efforts to educate the general public, and local and state officials about open burning. The FCEAD meets regularly with area fire fighters and state foresters to discuss education and enforcement efforts on the open burning regulations. Open burning flyers, that outline the air quality regulations, local fire safety ordinances and state forest service code restrictions, have been developed and are routinely distributed by many area agencies including the fire departments, the forest service, local zoning and planning, and the soil erosion department. [3]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The central authority does not monitor compliance with the smoke management program. [5]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Not applicable. [5]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Not applicable. [5]
<i>Program Evaluation</i>	

Smoke Management Program Component	Forsyth County
	North Carolina
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Not applicable. [5]
21. What are the review criteria?	<ul style="list-style-type: none"> • There are no review criteria. [5]

Smoke Management Program Component	Forsyth County
	North Carolina
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	• Not applicable. [5]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	• Not applicable. [5]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	• Not applicable. [5]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	• Prescribed fires are exempt from any air quality requirements for either nuisance or any other emission control. [5]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	• No, there is no smoke management program in our area. [5]

Smoke Management Program Component	Forsyth County
	North Carolina
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	•No funding is required. [5]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	• No. [5]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• Not applicable. [5]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• Not applicable. [5]

Source of summary information:

- [1] Western North Carolina Regional Air Pollution Control Agency Mission Statement. Available at <http://www.wncair.org/missionwpd.html>.
- [2] Western North Carolina Regional Air Pollution Control Agency Rules and Regulations, Chapter 4-Air Pollution Control Requirements, .1901-Purpose, Scope, and Impermissible Open Burning. Available at http://www.wncair.org/Rules_Regs/aq-regs_CH4_Sec.1400-.1900.htm.
- [3] Western North Carolina Regional Air Pollution Control Agency: Regulation of Open Burning Explained. Available at <http://www.wncair.org/firereg.html>.
- [4] Western North Carolina Regional Air Pollution Control Agency: Don't Get Burned!. Available at <http://www.wncair.org/burnfly.html>.
- [5] Western North Carolina Regional Air Pollution Control Agency: Open Burning Permit. Available at <http://www.wncair.org/burpermi.html>.

Special Notes:

- Western North Carolina Regional Air Pollution Control Agency is currently making changes (dated April 7, 2000) to the Agency's rules and regulations. The draft changes are available at http://www.wncair.org/Proposed_Rules_Regs/aq_regs_Index.htm.

Smoke Management Program Component	Western North Carolina Regional Air Pollution Control Agency (WNCRAPCA)
	North Carolina
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Western North Carolina Regional Air Pollution Control Agency (WNCRAPCA) has authority over all open burning in Buncombe and Haywood Counties and determines what and when people can burn. [1][3]• Fires purposely set to forest lands for forest management practices must be acceptable to the Division of Forest Resources. [2]• Fires purposely set to agricultural lands for disease and pest control and fires set for other agricultural or apicultural practices must be acceptable to the Dept. of Agriculture. [2]• Fires purposely set for wildlife management practices must be acceptable to the Wildlife Management Commission. [2]

Smoke Management Program Component	Western North Carolina Regional Air Pollution Control Agency (WNCRAPCA)
	North Carolina
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The WNCRAPCA covers and has authority over all open burning the areas of Buncombe County, Haywood County and the City of Asheville. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The available information does not discuss a smoke management program; however burners are required to minimize impacts and emissions from fires. See question 9 for the required actions.
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The WNCRAPCA regulation discusses all types of open burning including the burning of hand and machine piled materials, open burning for land clearing or right-of-way maintenance and burning related to forest, wildlife and agricultural management practices. [2]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • The burner must get an inspection from the WNCRAPCA prior to burning machine piled brush resulting from land clearing. If the brush pile is approved, an open burning permit is issued. The burning permit is valid for six months upon receipt of the permit. The burner must then get an activation number by calling the WNCRAPCA prior to burning. The activation number must match the number on file when the inspector checks the site. After the third activation number a WNCRAPCA employee must reinspect the pile(s) before another activation number can be issued. This prevents the adding of stumps, logs and other items which cannot be burned. [3][4] • A permit is required from the Asheville Fire Dept. for the burning of hand piled materials (leaves, yard trimmings, and brush) or machine piled brush inside Asheville City limits. [3] • Hand piled brush burning requires a permit from the NC Division of Forest Resources if it is within 500 feet of a woodland. [3]

Smoke Management Program Component	Western North Carolina Regional Air Pollution Control Agency (WNCRAPCA)
	North Carolina
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • It must be a designated open burning day determined by the WNCRAPCA. [4] • For burning machine piled brush resulting from land clearing, an inspection, permit and activation number is required, the piles must be clean brush and not contain dirt or stumps, the piles must be further than 1000 feet from an occupied structure and be burned between 11 AM and 3 PM. Although the burning does not have to be completed by 3 PM, no materials may be added to the pile after that time. The piles may not be left unattended. [3] • For burning hand piled materials (leaves, yard trimmings, and brush) inside Asheville City limits a permit is required and material must be burned between 8 AM and 6 PM. [3]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Information not provided.
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	Western North Carolina Regional Air Pollution Control Agency (WNCRAPCA)
	North Carolina
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Burning must occur during the designated hours permitted for the type of burn. [3] • Machine piled brush resulting from land clearing must be clean and not contain dirt or stumps which would smolder rather than burn cleanly. [3] • The WNCRAPCA limits burning days to those days not characterized by unhealthful ozone levels (designated open burning days). [4] • For open burning for land clearing or right-of-way maintenance, prevailing winds at the time of burning must be away from any area, including public roads within 250 feet of the burn, which may be significantly affected by smoke, ash, or other air pollutants from the burning and the location of the burn must be at least 1,000 feet from any dwelling, group of dwellings, or commercial or institutional establishment, or other occupied structure not located on the property on which the burning is conducted. If the winds change the fire must be extinguished.[2] [5]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	Western North Carolina Regional Air Pollution Control Agency (WNCRAPCA)
	North Carolina
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> Although SMPs are not specifically discussed in the available information, burners may be required to complete an open burning permit and/or have the material to be burned inspected by the WNCRAPCA. The permit requests general information on burner identification and site description. [5]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> Information not provided.
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> Information not provided.
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> Contingency plans are not specifically discussed in the available information; however, the Open Burning Permit states that prevailing wind must be away from public roads if the burning is within 250 feet of the road. If the winds change the fire must be extinguished. [5]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> When burning machine piled brush resulting from land clearing, the piles may not be left unattended. [3]

Smoke Management Program Component	Western North Carolina Regional Air Pollution Control Agency (WNCRAPCA)
	North Carolina
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The WNCRAPCA provides a informational phone number (704-255-5645). [3] • The WNCRAPCA has an inspector on call 24 hours a day for burning and odor complaints. [1] • General open burning information and the WNCRAPCA regulations are available to the public via the Internet. [1-5]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The WNCRAPCA has a burning inspector that inspects land clearing materials prior to burning. [1] • The WNCRAPCA has an inspector on call 24-hours a day for burning and odor complaints. [1] • After the third activation number is issued to a burner, a WNCRAPCA employee must reinspect the pile(s) before another activation number can be issued. This prevents the adding of stumps, logs and other items which cannot be burned. [4]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Civil Penalties will be assessed for violators of the regulations. [3] • Failure to have an activation number and pile inspection will result in fires being extinguished at the owners/contractors expense. [5]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Information not provided.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Information not provided.
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	Western North Carolina Regional Air Pollution Control Agency (WNCRAPCA)
	North Carolina
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> For open burning for land clearing or right-of-way maintenance, prevailing winds at the time of burning must be away from any area, including public roads within 250 feet of the burn, which may be significantly affected by smoke, ash, or other air pollutants from the burning and the location of the burn must be at least 1,000 feet from any dwelling, group of dwellings, or commercial or institutional establishment, or other occupied structure not located on the property on which the burning is conducted. [2]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> Information not provided.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> Information not provided.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> Information not provided.
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> Information not provided.

Smoke Management Program Component	Western North Carolina Regional Air Pollution Control Agency (WNCRAPCA)
	North Carolina
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Information not provided.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Information not provided.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Information not provided.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Information not provided.

Source of summary information:

- [1] North Dakota Air Pollution Control Rules, Chapter 33-15-04, Open Burning Restrictions at <http://www.health.state.nd.us/ndhd/envIRON/ee/air/regs/331504.pdf>
- [2] North Dakota Department of Health, Application for Open Burning Variance, SFN-8509 at <http://www.health.state.nd.us/ndhd/envIRON/ee/air/forms/air/08509si.pdf>
- [3] Comments received from the North Dakota Health Department dated July 20, 2000.

Special Note:

- This report was reviewed by the North Dakota Health Department. For more information, contact Chuck McDonald, NDHD, 1200 Missouri Ave., Bismark, ND, 58506-5520.

Smoke Management Program Component	State
	North Dakota
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	• North Dakota regulations specify permissible open burning and the applicable conditions. In order to burn a material not specifically allowed in the regulations, a variance to the rules must be obtained from the North Dakota Department of Health, Division of Air Quality (DAQ), by first submitting an application for an open burning variance. Fires purposely set to forest or rangelands for a specific reason in the management of forest, rangeland, or game are permitted by rule and do not need a variance; however, prior approval of the DAQ is required. [1]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	• Applications for an open burning variance must be approved by both the Local or District Health Unit and by the City or Rural Fire Department before submittal to the DAQ. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	• North Dakota does not have a smoke management program.

Smoke Management Program Component	State
	North Dakota
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<p>The regulations cover several types of open burning including, but not limited to:</p> <ul style="list-style-type: none"> • Fires purposely set to forest or rangelands for a specific reason in the management of the forest, rangeland or game in accordance with practices recommended by state or federal agencies, as appropriate, and the burning is approved in advance by the DAQ. [1] • The burning of trees, brush, grass, wood, and other vegetable matter in the clearing of land, right-of-way maintenance operations, and agricultural crop burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • They use a standardized form which contains the legal description of the area(s), the number of acres to be burned, the time required to burn (hours/days) and a map showing the area(s). [3]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Fill out the required form. Most Federal Agencies have a smoke management plan which they have submitted to the DAQ for review. Most prescribed burning is coordinated by the North Dakota Fire Council. [3]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The application form was a coordinated effort between the DAQ and the North Dakota Fire Council which is comprised of all the Federal and State Agencies that conduct prescribed burning in the State. [3] • Smoke management training and fire control techniques are taught by the agencies conducting the prescribed burning. [3]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The smoke management plans prepared by the agencies conducting prescribed burning usually examine alternative procedures. [3]

Smoke Management Program Component	State
	North Dakota
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Burning must not be conducted upwind of, or in proximity to, an occupied building such that the ambient air of such occupied building may be adversely affected by the air contaminants being emitted. [1] • Care must be used to minimize the amount of dirt on the material being burned and the material must be dry enough to burn cleanly. [1] • Except in an emergency, burning may not be conducted in such proximity of any Class I area that the ambient air of such area is adversely impacted. [1] • Burning is prohibited if the fire index is in the “extreme” category as issued by the National Weather Service. Notification is required to the DAQ prior to starting the burn if the fire index is in the “very high” category. [1] • If state or local fire officials determine conditions unsafe for open burning, such burning must cease until conditions are deemed safe by such officials. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • No. If complaints are received about a prescribed burn, an inquiry into the procedures followed and the conditions that existed during the burn would be initiated. [3]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • The application for open burning approval must include: [2] <ul style="list-style-type: none"> - Applicant information - Location of burn site and description of materials to be burned - Reason for burning and when it will be completed - A list of towns or occupied residences within one mile - Additional comments
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • The burning may be conducted only when meteorological conditions favor smoke dispersion and air mixing. [1] • The burning must not be conducted adjacent to any highway or public road so as to create a traffic hazard. [1] • The burning must not be conducted adjacent to any operational military, commercial, county, municipal, or private airport or landing strip in such a manner as to create a hazard. [1] • Except in an emergency, the visibility of any Class I area cannot be adversely impacted. [1]

Smoke Management Program Component	State
	North Dakota
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • There is no current requirement to notify the affected public but the Federal Agencies typically alert the nearest radio station for public announcements. [3]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • No contingency plans are required and there have been no reported smoke intrusions to date. [3]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • There is no current requirement to monitor for air quality impacts. [3]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • No program has been established at this time. [3]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • No actions are planned at this time. [3]

Smoke Management Program Component	State
	North Dakota
18. What penalties are authorized for non-compliance?	• Fines up to \$10,000 per day per violation are authorized under the Air Pollution Control Rules. [3]
19. Are post-burn reports required? What information is required?	• No. [3]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	• Not at this time. [3]
21. What are the review criteria?	• Not applicable. [3]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	• No. [3]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	• No. [3]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	• Not applicable. [3]

Smoke Management Program Component	State
	North Dakota
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The State does have nuisance laws which could apply, but it is unlikely that the DAQ would initiate action under these laws. A more likely course of action would result from non-compliance with the conditions contained in the variance or approval, if it was determined that such a departure had occurred. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Chapter 33-15-04 is part of the SIP and any smoke management plan policy that might be added in the future would likely be added to this chapter. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Not applicable. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • Not at this time. This may have to done to comply with the proposed requirements of EPA's "Consolidated Emissions Reporting". [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No. [3]

Smoke Management Program Component	State
	North Dakota
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • No plans are in place at this time. [3]

Source of summary information:

- [1] Smoke Management Reference Manual. Oregon Department of Forestry, Fuels and Meteorological Services Section. June, 1993.
- [2] Memorandum of Understanding between the Oregon Department of Environmental Quality, Oregon Department of Forestry, U.S. Department of Interior Bureau of Land Management, and U.S. Department of Agriculture Forest Service. Undated.
- [3] Comments received from the Oregon Department of Forestry dated August, 1999.
- [4] Comments received from the Oregon Department of Forestry dated August 8, 2000.

Special Note:

- This survey was reviewed by the Oregon Department of Forestry. For more information, contact Mike Ziolk, ODF, 2600 State St., Salem, OR, 97310.

Smoke Management Program Component	State
	Oregon
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Oregon Department of Forestry (ODF) State Forester is responsible for making the burn/no burn decisions. Burning instructions must be complied with on all applicable lands. [1][3]• The authority for approving prescribed burning is delegated to the District Forester for burning conducted within ODF protection district boundaries. [1]• Authority is delegated to the Forest Supervisor for the USDA, Forest Service, and the park Superintendent for the National Park Service for burning in their administrative areas that are coordinated with the State forester. [1]• The Bureau of Land Management is delegated authority in areas outside of the restricted area. [1]

Smoke Management Program Component	State
	Oregon
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU’s in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The ODF coordinates with the Oregon DEQ. Cooperating agencies that provide information and/or resources include the Washington Department of Natural Resources, the USDA Forest Service, the Bureau of Land Management, Bureau of Indian Affairs, U.S. National Park Service, U.S. Fish & Wildlife Service, National Weather Service, Regional air pollution authorities, and Oregon Forest Industries Council. [1] • A memorandum of understanding (MOU) exists between the Oregon DEQ, Oregon ODF, U.S. Department of Interior Bureau of Land Management, and U.S. Department of Agriculture Forest Service to achieve the common goal of protecting air quality, life and property, and restoring and maintaining the health of forest ecosystems in northeast Oregon. [2] • Courtesy coordination occurs between ODF and the NE California Air Alliance, keeping each other informed of activities. [4]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • The program is applicable to prescribed burning on forest land in Oregon within Oregon ODF forest protection district or national forest boundaries where the intent is to maintain the land in use for forest management purposes or as a commercial forest operation. [1] • Private and non-federal government forest landowners must perform forest land prescribed burning according to the Oregon Smoke Management Plan and must burn according to directions from ODF field administrators. Federal land managers must also perform according to the SMP, they have the delegated authority. [1][4] • The program does not apply to prescribed natural fires. [1] • Burning on private land, at any time, outside of a protection district is not part of the program. All such burning must be conducted in accordance with requirements of state or local agency air quality regulations. [1]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The program covers prescribed burning on forest land in Oregon within Oregon ODF forest protection district or national forest boundaries where the intent is to maintain the land in use for forest management purposes or as a commercial forest operation. [1]
5. How do land managers apply for authorization to burn?	<p>Three basic steps are involved:</p> <ul style="list-style-type: none"> • A ODF Forest Practices Forest Activities Computer Tracking System (FACTS) number must be obtained through the local ODF office prior to burning a unit. [1] • A “Unit Description” is reported on a Reporting System Coding Sheet (Part 1, Form 1-4-1-501) and then entered into the computer by the field administrator. [1] • Unit numbers of planned burns in the restricted area are submitted by field offices on the day before burning is to be done. This results in a list of planned burns (Part 2, Form 1-4-1-501). [1]

Smoke Management Program Component	State
	Oregon
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • A forest landowner or operator must, in cooperation with the State Forester, develop a written burn plan when the ODF district determines that the plan is needed. [1] • Burning will not be initiated until smoke management instructions are issued from Salem. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Although the Washington Department of Ecology is not a signatory of the MOU, the DEQ, ODF, BLM, and the Forest Service coordinate with them on all air quality and forest health concerns. [1] • Burner requirements are not discussed in the SMP. • A certified burn manager program is being developed. The degree to which smoke management will be included is unknown. [4]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The program does not specifically discuss alternatives to fire as a land management tool but does encourage, through the Forest Practices Foresters, alternate treatment practices that are consistent with the purposes of the Forest Practices Act. [1] • The ODF will encourage private forest landowners to burn only those units that must be burned to achieve the landowners' objectives. Forest Practices Foresters will encourage utilization of residue, fuel reduction measures, low emission-producing burning methods, and alternate treatment practices that are consistent with the purposes of the Forest Practices Act. [1] • Emission reductions are tracked, but the techniques used to achieve the reductions are not. [4]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Mass ignition methods are encouraged to help reduce emissions where such techniques are economical and practical. [1] • Mop-up is initiated consistent with atmospheric and wind conditions. [1] • Tonnage limits are reviewed by the DEQ and ODF for possible update and revision, as necessary, as uniform fuel loading estimation and consumption procedures are developed and tested. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The reporting system forms do not require documentation of the actions taken to minimize emissions before and during fires. [1]
<i>Smoke Management Components of Burn Plans</i>	

Smoke Management Program Component	State
	Oregon
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • A forest landowner or operator must, in cooperation with the State Forester, develop a written burn plan when the ODF district determines that the plan is needed for fire control or air quality reasons. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • The State Forester and the field administrators will monitor weather factors and air quality conditions in designated areas and other areas sensitive to smoke. [1] • The Salem Forestry Weather Center provides smoke management forecasts daily. The forecast is for the following day with an update as necessary on the morning of the forecast period. The forecasts include reference to transport winds and mixing for the restricted area and other areas sensitive to smoke. Burning will be conducted in accordance with the current forecast information. [1] • Smoke management instructions are issued by the state meteorologist at the Salem Forestry Weather Center and during periods when weather is favorable for significant amounts of burning. The instructions are based on an analysis of the atmospheric conditions affecting smoke transport, dispersion, and air quality in designated areas and other areas sensitive to smoke. [1] • For purposes of visibility protection, the Mt. Hood, Mt. Jefferson, Mt. Washington, Three Sisters and Diamond Peak Wilderness areas and Crater Lake National Park as well as all Class I areas have been set aside under the SMP as “smoke sensitive” areas from July 1 to September 15. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Federal and non-federal landowners are encouraged to notify adjoining residents of planned burning at least one week in advance and also on the day of the burning, if possible. [1] • Daily information is available on the web. [4]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<p>While formal contingency plans are not discussed in the reference manual, the following is required:</p> <ul style="list-style-type: none"> • The field units are required to provide a smoke intrusion report to the smoke management meteorologist if smoke from prescribed forest burning enters a designated area or other area sensitive to smoke at ground level. This allows the smoke management personnel to obtain monitoring data prior to and during the incident. It also facilitates public relations work resulting from an incident. [1] • Any wildfire that has the potential for smoke input into a designated area or other area sensitive to smoke must be reported immediately to the State Forester’s Fire Operations Center. [1]

Smoke Management Program Component	State
	Oregon
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The DEQ maintains a realtime monitoring network used by ODF. [1] [3] Particulate levels are monitored. [4] • The air quality impacts of fire must be monitored. [1] • The State Forester monitors prescribed burning operations when necessary by aircraft and other means to insure compliance and determine the effectiveness of smoke management procedures. [1] • Random audits and requiring smoke intrusion reports are ways of monitoring. [1] • Field units are responsible for monitoring burn activity and reporting intrusions. [1] • Monitoring is intensified when needed by using lookouts, aerial observations, and on-site observations of smoke behavior. [1] • Landowners are responsible for intermittent monitoring for at least 3 days to ensure the smoke is not causing an impact in a nonattainment city. Landowners must provide a level of mop-up, as directed by the ODF, which will prevent or minimize smoke impacts upon the PM-10 nonattainment areas. [1] • Impact severity levels are established. Date is used to modify burning and improve the program. [4]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • A public education and awareness program has not been established. [4]
<i>Surveillance and Enforcement</i>	

Smoke Management Program Component	State
	Oregon
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • To evaluate compliance with the smoke management program, the State Forester will conduct a review of approximately 1% of the units burned each year in the restricted area. Approximately one-half of the audits will be conducted on the day of the burn and approximately one-half will be pre-burn audits. [1] • The DEQ may participate in audits. [1] • Daily reporting procedures allow tracking of burns that are or are not in compliance with daily burning instructions. [4]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • On non-federal lands violations of the smoke management program, directive, or the daily instructions issued by the State forester are subject to enforcement action by the State Forester: 1) burning without a permit is a violation of ORS 477.515, and 2) burning not in compliance with the smoke management program and directive is a violation of OAR 629-615-0300(2)(a). [1] • On Federal forest land violations of the smoke management program, directive or the daily instructions issued by the State Forester are subject to federal enforcement action under Section 118 of the Clean Air Act, as amended in 1990. [1]
19. Are post-burn reports required? What information is required?	Yes, a computerized accomplishment report is submitted by field offices in the restricted area the day after burning. The report requires the following information: fire unit number, district or forest identifier, actual date of burn, actual ignition time, number of acres actually burned, fuel actually consumed in piles, fuel consumed in broadcast portion of units or underburns, ignition duration, ignition method, if rapid ignition was achieved, weather station, 10-hour fuel moisture, 1000-hour fuel moisture, 1000-hour fuel moisture method used, number of days since significant rain, unit weather at the time of ignition, and snow-off month. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The smoke management plan and directive is reviewed at least every five years. The review is conducted by the State Forester and the Director of Environmental Quality and includes representatives of affected agencies and parties. [1]
21. What are the review criteria?	<ul style="list-style-type: none"> • There are no specific review criteria. The entire plan is reviewed for applicability and need on a periodic basis. [4]
Optional Air Quality Protection	

Smoke Management Program Component	State
	Oregon
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The program establishes special protection zone (SPZ) requirements. [1] • The SPZ is shown on maps which are included with the documentation for Special Protections Zone Requirements (Appendix 4) of the Smoke Management Reference Manual. [1] • Prescribed burning in the SPZ will be allowed only when the smoke management meteorologist believes there will be no measurable smoke impacts within the PM-10 nonattainment area. [1] • Between December 1 and February 15, no new ignitions will be allowed in the SPZ on a day that a “Red” day has been declared through the local woodstove curtailment program. No pile burning will be allowed if ODF believes that the piles will produce significant smoke after the third day. [1] <p style="text-align: right;"><i>Continued on next page</i></p>
22. <i>Continued</i>	<ul style="list-style-type: none"> • For SPZs, in the event that areas violate the PM-10 standards beyond statutory deadlines and prescribed burning is demonstrated to be a significant source, the following contingency plan provisions will be implemented: 1) the SPZ boundaries will be expanded to include the area from which burning could have a significant impact during the nonattainment period, 2) SPZ restrictions will apply over more of the calendar year (November 1 to March 1), 3) The SPZ around Kalmath Falls and La Grande, as well as all future PM-10 nonattainment areas will have mandatory smoke management programs during the time when the zones are in effect, and 4) Prescribed burning will be prohibited within the SPZ during December and January if an impact of 5 to 10 micrograms per cubic meter, 24 hour average, is demonstrated, after contingency provisions are in effect. Burning will be prohibited November 1 to March 1 if an impact of 10 micrograms per cubic meter, 24 hour average, as demonstrated by monitoring, after the contingency provisions go into effect. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • While the program does not establish any specific performance standards, the program does established a smoke management Directive. The objective of the Directive is to prevent smoke, resulting from burning on forest lands, from being carried to or accumulating in designated areas and other areas sensitive to smoke; to provide maximum opportunity of essential forest land burning; to coordinate with other state smoke management programs; to conform with state and federal air quality and visibility requirements; to protect public health,; and to encourage the reduction of emissions. [1] • Intrusions intensity is defined. [1][3] • An emissions reduction goal is established. [4]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Adjustments in burning strategies are made after the progress in meeting objectives is evaluated during periodic reviews. [4]

Smoke Management Program Component	State
	Oregon
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The smoke management plan protects “other areas sensitive to smoke” (OAR 629-043-043(2)(q)) [1] [3] • Intrusions of smoke are defined in the smoke management operational directive with quantitative nephelometer values. [1][3][4] • The regulations do not apply to prescribed natural fires. [4]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Yes. [3] • Visibility considerations are also part of the SIP. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • General fund, harvest tax, per acre fees, and direct payment for services fund the program. OAR 629-043-041 describes the acreage assessment. An MOU exists with federal agencies in northeast Oregon for direct payment. [3] • The acreage assessment is \$0.50/acre to register a unit for burning and \$2.50/acre for piled burns accomplishments and \$5.00/acre for broadcast and underburn accomplishments. Fee exemptions are allowed for forest health burning and units less than 3 acres in size. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The Department of Forestry calculates particulate emissions for every burn. Emissions can be summarized for any time period. [3] • Emissions calculations are based on actual acres burned, weather and fuel conditions and fuel consumption algorithms. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No. [3]

Smoke Management Program Component	State
	Oregon
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • If necessary, the certification would occur during a revision to the SIP. There is no specific timeline. [4]

Source of summary information:

- [1] Smoke Management Guidelines for Vegetative Debris Burning Operations in the State of South Carolina. South Carolina Forestry Commission. Revised November 1998.
- [2] Memorandum of Understanding between the South Carolina Department of Health and Environmental Control Bureau of Air Quality and the South Carolina Forestry Commission. July, 1985.
- [3] Air Pollution Control Regulation 61 - 62.2 (Health & Environmental Control Department) at www.state.sc.us/forest/lawdh2.htm
- [4] South Carolina Forest Law Handbook, Regulation of Fires on Certain Lands, Title 48, Chapter 35 at www.state.sc.us/forest/lawprec.htm#contents
- [5] South Carolina Forest Law Handbook, South Carolina Prescribed Fire Act, Title 48, Chapter 34 at www.state.sc.us/forest/lawpres.htm#20
- [6] Comments received from the South Carolina Forestry Commission. August 1999.
- [7] Comments received from the South Carolina Department Health & Environmental Control. November 2000.

Special Note:

- This survey was reviewed by the South Carolina Forestry Commission and the Department of Health. For more information, please contact Larry Barr, SCFC, P.O. Box 21707, Columbia, SC, 29221, or Jerry Chalmers, SC DHEC, Bureau of Air Quality, 2600 Bull Street, Columbia, SC, 29201.

Smoke Management Program Component	State
	South Carolina
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The South Carolina Forestry Commission (SCFC) is responsible for administering the Smoke Management Guidelines and has the authority to make burn/no burn decisions. [1] • The South Carolina Department of Health and Environmental Control (DHEC) retains enforcement authority for violations of the smoke management guidelines. [7]

Smoke Management Program Component	State
	South Carolina
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The SCFC consults with and coordinates activities with the DHEC. [1] • Daily compliance with the smoke management guidelines will be coordinated by the appropriate SCFC Dispatch Center. [1] • A MOU exists between the SCFC and the South Carolina Department of Health and Environmental Control Bureau of Air Quality for the purpose of accomplishing mutual objectives. [2] • In short, the parties of the MOU agree that the SCFC assumes responsibilities pertaining to smoke management and the DHEC assumes authority of Air Pollution Regulation 62.2 and that both parties will coordinate with one another. [2] • The DHEC retains enforcement authority for violations of either regulation 62.2 or smoke management guidelines. [7]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Yes, the guidelines state that the prescribed fire manager is ultimately responsible for compliance with the guidelines and should follow a logical plan, identify any smoke sensitive areas, and evaluate downwind conditions prior to and during burning operations. [1] • No property owner or lessee or his agent or employee conducting a prescribed fire pursuant to Title 48, Chapter 34 is liable for damage, injury, or loss caused by fire, resulting smoke, or other consequences of the prescribed fire unless negligence is proven. [5] • Open burning in incorporated areas is subject to air regulation 62.2. [7]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The guidelines focus on forest, wildlife, and agricultural areas to be burned. Crop stubble/grass field, piled debris, and ditchbank/hedgerow burning limitations are also discussed. [1] • The Memorandum of Understanding (MOU) covers vegetative debris burning related to forestry, wildlife, and agriculture and silviculture. [2] • Air Regulation no. 62.2 covers all types of open burning. [3][7]

Smoke Management Program Component	State
	South Carolina
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • A written prescribed fire plan, prepared by a knowledgeable person, is needed for each forest, wildlife, and agricultural area to be burned (except for crop stubble and grass fields). [1] • The fire manager must be in compliance with Title 48, Chapter 35 of the 1976 Code of Laws as amended (Notification-Precautions Law), and all other applicable regulations. [1] • The fire manager must calculate available fuel tonnage and/or acreage that may be burned under forecasted conditions prior to notification (informing the SCFC of intent to burn). [1] • On the day of the burn the fire manager should call the Forestry Commission Dispatch Center to notify them of the burn and to report the following information: (1) Time of the burn (planned), (2) County and location (latitude and longitude if possible), (3) Type of burn, (4) Tonnage and/or acreage to be burned, (5) Identity of and distance to nearest downwind smoke sensitive area, and (6) Person in charge of burn and how he/she can be contacted. [1] • Notifications are accepted only on the day of the burn. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The category day must be appropriate for the particular burn. Fire managers must obtain the category day, a scale of 1 to 5 based on ventilation rates, from the Forestry Commission office. Based on the category day, fire managers may proceed with the burn, may proceed with limitations, or may not be allowed to burn. [1] • The fire manager must notify the Forestry Commission Dispatch Center on the day of the burn. [1] • Maximum fuel tonnage that may be burned per day must not exceed the permissible limit set for a given 16,000 acres (25 square miles). The permissible limit is dependant on the distance to the nearest downwind smoke sensitive area and the category day. The limit can be found from tables in the Smoke Management Guidelines. [1] • Special action regarding open burning during an Air Pollution Episode may apply. [2] • The prepared prescribed fire plan should be on site during the burn. [1] • Prescribed fires conducted in accordance with Title 48, Chapter 34, must have at least one certified prescribed fire manager present and supervising the burn from ignition until it is declared safe. [5]

Smoke Management Program Component	State
	South Carolina
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Neither the guidelines nor the regulations discuss if operating agreements have been established between the SCFC and large land managers, but a MOU does exist between the SCFC and the South Carolina Department of Health and Environmental Control Bureau of Air Quality for the purpose of accomplishing mutual objectives. [2] • To become a Certified Prescribed Fire Manager, one must: 1) Successfully complete a training program which includes home study, an 8-hour classroom session, and a written exam. 2) Provide documentation of practical experience in prescribed burning. 3) Agree to conduct all burning in compliance with all applicable laws and ordinances. [From SCFC web site fact sheet] • The Certified Prescribed Fire Manager Program is administered by the SCFC and information can be obtained by calling (803) 896-8837. [From SCFC web site fact sheet] • The DHEC has no operating agreement with land managers in place. [7]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Alternatives to fire are not considered at this time. However, meetings to discuss this and other SMP topics is planned between SCFC and DHEC. [7]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Open burning is permitted only if the following minimum conditions are followed: (1) The amount of dirt on the material being burned must be minimized, (2) No heavy oils, asphaltic materials, items containing natural or synthetic rubber, or any other materials other than plant growth may be burned, and (3) All salvageable timber and pulpwood must be removed prior to burning for land clearing. These are non-prescribed fire restrictions (Regulation 62.2). Only SMP requirements are in place for prescribed burns. [3][7]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The written prescribed fire plan must include smoke management information. [1]
<i>Smoke Management Components of Burn Plans</i>	

Smoke Management Program Component	State
	South Carolina
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Yes, a written prescribed fire plan is required for each forest, wildlife, and agricultural area to be burned (except for crop stubble and grass fields) and must be prepared by a knowledgeable person. The guidelines include a sample plan. [1] • The written plan should include the following: (1) Location and sketch map or photo, (2) Purpose and objective, (3) Description of stand, fuels, and topography, (4) Optimum weather and fuel conditions, (5) Smoke management information, (6) Preparation required, (7) Public contacts needed, (8) Firing technique, (8) Patrol, mop up, and escaped fire procedures, (9) Special precautions, and (10) Evaluation information. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • Fire managers must obtain the fire weather forecast, which includes information on smoke management, by calling a Forestry Commission Dispatch Center (1-800-777-3473) or on the internet (www.state.sc.us/forest). [1] • The guidelines describe general burning limitations based on the category day and ventilation rate. [1] • Burners are cautioned that smoke flows and settles in low areas during the night and early morning and may create hazardous road conditions, especially when combined with fog. [1] • The guidelines state that the prescribed fire manager must evaluate downwind conditions prior to and during burning operations. This includes smoke sensitive areas within a sixty degree arc downwind from the burn. The guidelines are not specific on how this evaluation should be done. [1] • Visibility and regional haze are not currently considered for approval to burn. [7]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Neither the guidelines, the regulations, nor the MOU discuss if the public must be notified when fires are authorized; however, the prescribed fire plan requires contact information regarding the RFD and land owners adjacent to the burn area. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Plans to require exposure to smoke if intrusions occur are not currently considered. However, meetings to discuss this and other SMP topics are planned between SCFC and DHEC. [7]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The person starting the burning must supervise carefully the fire started and have it under control prior to leaving the area. [4] • No monitor requirements exist. Data (limited) has been assessed. The monitoring piece is also on the table for the SCFC / DHEC meeting. [7]

Smoke Management Program Component	State
	South Carolina
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Yes- media publicity, classes, and landowner and public meetings. [6] • There was little, if any, public involvement in establishing our SMP. Public outreach and education are needed, but no plan has been developed/implemented. [7]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The SCFC performs complaint investigations of vegetative debris burning. Noted air quality regulatory violations are referred to the DHEC. [1] • Daily compliance with the smoke management guidelines is handled by the SCFC Dispatch center. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • A written report or warning to a person of a violation at one site is considered adequate notice of the Regulation, and subsequent observed violations at the same or different site will result in appropriate legal action. DHEC Regulation 62.2 language penalty authority is up to \$10,000 per day of violation. [3][7] • Any person violating the provision of Title 48, Chapter 35 is guilty of a misdemeanor and will be fined not less than \$10 nor more than \$100 or imprisoned for not less than ten days nor more than thirty days. For any subsequent offense, a fine of not less than \$25 nor more than \$300 or imprisonment for not more than six months may be imposed. [4]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • If a prescribed fire manager decides not to complete a burn or reduces the number of acres to be burned, he/she should then advise the Dispatch Center. [1] • The prescribed fire plan requires post-burn evaluation information that includes: (1) Weather and temperature conditions, (2) Percentage of fuel burned, (3) Smoke dispersal, (4) Objectives met, and (5) Problems encountered. [1]

Smoke Management Program Component	State
	South Carolina
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • SCFC until very recently re-evaluated the program as needed and made changes with DHEC concurrence. Discussions are scheduled to address SMP need concerns. There is no current schedule for periodic review. [7]
21. What are the review criteria?	<ul style="list-style-type: none"> • Not yet established. [7]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • Smoke-sensitive areas are defined as any area downwind or down-drainage where smoke may be dangerous or offensive (i.e. roads, towns, chicken farms, etc). [1] • The guidelines state that it is important that the fire manager preparing the plan and conducting the burn consider the location of all potential smoke-sensitive areas in order to eliminate any adverse effects from the smoke. In addition to evaluating smoke-sensitive areas within a sixty degree arc downwind from the burn, the fire manager must consider possible wind direction shifts and down-drainage smoke drift in all directions. [1] • The guidelines present tables which describe the maximum amount of fuel that may be burn at any one time in relation to the distance to the nearest downwind smoke-sensitive area and the category day. [1]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • None established. [7]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Not applicable. Based on above. [7]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The DHEC has “undesirable level” language in the enabling legislation. Anything that “...damages property or which unreasonably interferes with enjoyment of life or use of property.” This vague language was almost never used in my 30+ years at DHEC. [7]

Smoke Management Program Component	State
	South Carolina
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • The DHEC says it is not part of the SIP. Regulation 62.2 as is refers to authority to allow prescribed burns is approved, but not the SMP. [7]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • No fees. All funding is part of agency operating budget. [6]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The SCFC does not. The DHEC has thus far only made calculations on emissions from prescribed burns when needed to complete emissions inventories for planning purposes (annual). Usually to assess reductions needed in other areas to reduce impacts from VOC or TSP emissions. [7]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Not using alternatives. [7]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • DHEC plans to try and certify the state SMP. EPA has noted some deficiencies in the program which would preclude the plan from being approved as is. Meetings are planned between DHEC and SCFC to discuss and try to resolve those noted issues. No time-line has been established thus far. [7]

Source of summary information:

- [1] South Dakota Department of Environment and Natural Resources, Air Quality Guideline for Open Burning.
- [2] South Dakota Department of Environment and Natural Resources, ARSD 74:36:06:07, Open Burning Practices Prohibited.
- [3] Comments received from the South Dakota Department of Environment and Natural Resources dated July 5, 2000.

Special Note:

- This survey was reviewed by the South Dakota Department of Environment and Natural Resources. For more information, contact Tim Rogers, Natural Resource Scientist, SD DENR, Joe Foss Bldg., 523 E. Capitol Ave., Pierre, SD, 57501.

Smoke Management Program Component	State
	South Dakota
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The South Dakota Department of Environment and Natural Resources (DENR) has the regulatory authority for the state's open burning rules. At the present time, South Dakota does not have authority to ban open burning in the state. We do have the authority to ban the open burning of such items as tires, railroad ties, and treated wood. The statutory authority to ban open burning is provided to counties or local governments. [1][3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • South Dakota does not have regional coordination at the present time. There may be regional coordination as we develop our smoke management plan. [3]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • South Dakota does not have a smoke management program. • The DENR is currently working with the National Forest Service and State Forest Service to develop smoke management plans for the Black Hills Region. [1]

Smoke Management Program Component	State
	South Dakota
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The regulations do not identify what is permissible to open burn. Open burning is typically conducted for the following practices: fire training; land clearing; right-of-way maintenance operations; agricultural crop burning; prescribed fires to manage ecosystems; elimination of fire hazards; untreated lumber scraps and trees; and recreational or ceremonial campfires. [1] • The regulations do prohibit the open burning of materials that generate hazardous air pollutants that have the potential to cause serious health problems. These materials include oils, railroad ties, coated electrical wire, rubber, tires, tarpaper, asphalt shingles, and wood products treated with inorganic arsenicals, pentachlorophenol, or cresols. [1][2]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Due to potential restrictions to burning in an area, burners should contact their local government (city or county), National Park Service, State Park Service, National Forest Service, or State Forest Service for approval if planning to initiate a burn. [1] • Examples include: requirement by the Division of Resource Conservation and Forestry to obtain a burning permit for burns conducted in the Black Hills Forest Fire Protection District; and open burning regulations (and permitting requirements) developed by the Pennington County Air Quality Board for the City of Rapid City. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The South Dakota Department of Agriculture, Division of Resource Conservation and Forestry, requires a permit to open burn in the Black Hills Protection District. The Pennington County Air Quality Board requires a permit to burn in the Rapid City area. [3]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • No, we have not completed our SMP yet. [3]
<i>Minimizing Air Pollutant Emissions</i>	

Smoke Management Program Component	State
	South Dakota
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • There are no steps or requirements developed to consider alternatives to fire as a land management tool. For suggestions on alternatives or information on open burning, burners can contact the Waste Management Program at (605) 773-3153. [1][3] • These issues will be developed in the SMP. [3]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The following guidelines apply to the open burning of trees, brush, grass, wood, and any vegetation in the clearing of land, right-of-way maintenance operations, and agricultural crop burning: 1) The prevailing winds during the burn should be away from any city or any occupied residence likely to be affected by the smoke to the best extent possible; 2) The amount of dirt in the material being burned should be minimized to reduce smoldering; 3) Materials creating unreasonable amounts of smoke or air pollutants may not be burned; 4) No hazardous waste or material shall be burned; 5) Open burning should be conducted between three hours after sunrise and three hours before sunset; 6) Open burning should not obscure visibility or create traffic hazard on any public road or airport right of way; 7) Notification of the burn; and 8) Common sense precautions, such as having someone watch over the fire until it is extinguished and assuring smoke does not impact residences or impair vehicular travel on highways, should be followed. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • No. [3]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • The SMP is not developed yet. It has not been determined if plans or permits will be required. [3]

Smoke Management Program Component	State
	South Dakota
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Open Burning Guideline: Open burning should be conducted between three hours after sunrise and three hours before sunset for purposes of good smoke dispersion. [1][3] • Open Burning Guideline: Open burning should not obscure visibility or create traffic hazard on any public road or airport right of way. [1][3]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Open Burning Guideline: The following entities should be notified of when and where the open burn will occur: local fire department, municipality nearest the burn, the county sheriff's department and any military, commercial, county, municipal or private airport or landing strip that may be affected by the burn. [1][3]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • The SMP is not developed yet. This may be a requirement. [3]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • No monitoring requirements have been developed yet for the SMP. Presently, if a planned fire causes an exceedance of a National Ambient Air Quality Standard (NAAQS), then it will be counted towards a violation of the standard. If an entity develops a Smoke Management Plan that addresses air quality issues and a burn causes an exceedance of the standard, the exceedance will not be counted towards a violation of the NAAQS. Non-planned wildfires are not counted towards a violation if they cause an exceedance of the NAAQS. [1][3]
<i>Public Education and Awareness</i>	

Smoke Management Program Component	State
	South Dakota
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • The SMP is not developed yet to address public education and awareness. [3]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Will be addressed in the SMP. [3]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Will be addressed in the SMP. [3]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Will be addressed in the SMP. [3]

Smoke Management Program Component	State
	South Dakota
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	• Has not been determined. [3]
21. What are the review criteria?	• Has not been determined. [3]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	• Has not been developed or determined. [3]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	• Has not been developed or determined. [3]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	• Has not been developed or determined. [3]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	• Has not been developed or determined. [3]

Smoke Management Program Component	State
	South Dakota
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	• Has not been developed or determined. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	• Has not been developed or determined. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	• Has not been developed or determined. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• Has not been developed or determined. [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• Yes, by 2003. [3]

Source of summary information:

- [1] Pennington County Ordinance No. 12, Air Quality Ordinance, 2.02-Open Burning Rules. Available at <http://www.co.pennington.sd.us/airquality/aqord.html>.
- [2] Opening Burning Permit Application Form. Available at <http://www.co.pennington.sd.us/airquality/aqord.html> and http://www.co.pennington.sd.us/airquality/open_burning_permit.html.
- [3] Comments received from Pennington County Office of Air Quality on July 26, 2000.

Special Notes:

- Part of the Black Hills is located in Pennington County's Air Quality Control Zone and follows the County's open burning ordinance provisions.
- This survey was reviewed by the Pennington County (Black Hills) Office of Air Quality. For more information, contact Ann Rinke, Pennington County (Black Hills) OAQ, 315 St. Joseph Street - Rm. 304, Rapid City, SD, 57701.

Smoke Management Program Component	Pennington County/Black Hills
	South Dakota
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	• Burners within the Air Quality Control Zone are required to get burn approval from the fire control entity with jurisdiction in the area of the burn. In the Black Hills Forest Fire Protection District, permission is granted by the State Forester of the South Dakota Dept. of Agriculture, Resource Conservation and Forestry Division, or his designee. [1][3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none">• The acting central authority voluntarily coordinates scheduled burns with the Pennington County Air Quality Office. [3]• Agencies in Pennington County with jurisdiction for granting permission to open burn include the South Dakota Dept. of Agriculture, Resource Conservation and Forestry Division, the Rapid City Dept. of Fire and Emergency Services, and the Pennington County Air Quality Office in Rapid City. [1]• Coordination entails notification of the Air Quality Office and possibly postponing a burn if other circumstances interfere with current plans. [3]

Smoke Management Program Component	Pennington County/Black Hills
	South Dakota
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Yes, it is mandatory. The Air Quality Ordinance would be considered the SMP for this area. [3]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The County Ordinance covers open burning for agricultural irrigation ditches, noxious weed control, wildfire control management, and ecosystem management, fire department personnel training , fire hazards, and, under limited circumstances, for waste disposal. [1][3]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Burners must submit a completed Open Burning Application to, and receive permission to burn from the fire control entity with jurisdiction in the area of the burn. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Burners must get permission from the fire control entity with jurisdiction in the area of the burn. [1] • A fire control contingency plan must be identified in the application. [3] • All inappropriate fuels must be removed prior to the burn. Inappropriate fuels include, but are not limited to: leaves, grass clippings, green plants, refuse, paper, rubbish, books, magazines, fiberboard, packaging, rags, fabrics, animal waste, liquid or gelatinous hydrocarbons, tar, paints, and solvents, plastic, vinyl or rubber, waste oils, waste tires, tarpaper, asphalt shingles, railroad ties, or any wood that has been soaked or, treated with chemicals, including inorganic arsenicals, pentachlorophenols, or creosols. [1][2]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Yes, operating requirements are in the ordinance. Burner qualifications, as they relate to content and purpose of the burn, are listed in the open burning section of the ordinance. [3]
<i>Minimizing Air Pollutant Emissions</i>	

Smoke Management Program Component	Pennington County/Black Hills
	South Dakota
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Applicants must identify and justify his reason for open burning. If applicant's primary reason to burn is for waste disposal, then applicant must demonstrate that no other methods of disposal would be economically feasible. [3]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Inappropriate fuels (as described above) are not to be burned. [1] • Burning approval may be revoked or suspended by the Air Quality Director prior to an actual burn to protect the public health and welfare. [1] • Burning approval is contingent upon meteorological conditions, current ambient air quality data, and the volume of burning pending at the time of the request. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Information not provided.
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • The available information does not specifically discuss written burn plans but the burner must complete an Open Burning Application form. The form requests the following information: contact information for the responsible party; size, type, location and time of the burn; description of the fuel; and a contingency plan. [1][2]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Burners are asked to pay attention to wind direction and speed prior to planned ignition time. [2] • Burn/no burn decisions do not specifically consider visibility; only the impact they might have on raising PM concentrations in the monitored Air Quality Control Zone. [3]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • It is not required that the public be notified of planned fires.

Smoke Management Program Component	Pennington County/Black Hills
	South Dakota
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • A contingency plan (measures to be implemented in the event the fire gets unruly) must be included in the Open Burning Application. A contingency plan is any plan of action that would be used if any given fire starts to get out of control. For a small backyard fire of brush and tree limbs, the contingency plan might be as simple as "having a garden hose available". For larger scale burns, it could be a water truck, neighbors on standby with tools and fire extinguisher, or the availability of a fire truck or fire crew. Contingency plans are based upon each situation. [2]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Air monitoring within the Air Quality Control Zone takes place continuously at five locations. Hence, any detectable impacts in the regulated area from burning can be documented. During thermal inversions which meet certain meteorological criteria, thresholds have been established for calling air pollution alerts. During alerts, citizens are asked not to burn wood, unless it is the home's sole source of heat. Industry is asked to discontinue or curtail certain operations which may contribute to the air pollution levels. [3]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Public service announcements on both television and radio are routinely broadcast between the months of October and April. These announcements direct citizens to contact the Air Quality Office for more information and the office also receives and processes citizen complaints. [3] • Since the open burning provisions are part of an evolving county ordinance, public hearings are held for each revision proposed. [3]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Site inspections may be conducted at the discretion of the Air Quality Director. [1] • Complaints of smoke in neighborhoods are investigated on a case-by-case basis. [3]

Smoke Management Program Component	Pennington County/Black Hills
	South Dakota
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Penalties assessed for the burning of inappropriate fuels, or for any violation of Ordinance No. 12, will be \$100 per violation, per day. It is the responsibility of the citizen to have sufficient knowledge of this ordinance when engaged in any activity addressed by the ordinance.
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Post-burn reports are not required. [3]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The air monitoring within the regulated area provides one method of evaluating the program's effectiveness. [3]
21. What are the review criteria?	<ul style="list-style-type: none"> • Remaining in compliance with the Clean Air Act is the primary review criteria at this time. [3]

Smoke Management Program Component	Pennington County/Black Hills
	South Dakota
<i>Optional Air Quality Protection</i>	
22. Does the program establish any "special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The Air Quality Control Zone is considered the primary protection zone. It is defined in the ordinance by county section lines and boundaries. [3]
23. Does the program establish any "performance standards"? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The performance standard is to remain in compliance with the Clean Air Act. [3]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • State and local nuisance regulations only to the extent that smoke "annoys, injures or endangers comfort, repose, health or safety of others", or "renders the air a hazard or an injury to human health" (SDCL 7-8-33). [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • No. [3]

Smoke Management Program Component	Pennington County/Black Hills
	South Dakota
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • The local air quality program is 70% funded by the state through a grant from the EPA, then funded by permit fees and equal contributions from Rapid City and Pennington County. [3] • There are no fees associated with open burning at this time. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • No. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No. [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Information not provided.

Source of summary information:

- [1] Texas State Regulations. Chapter 111 – Control of Air Emissions from Visible Emissions and Particulate Matter, Subchapter B – Outdoor Burning. Texas Natural Resource Conservation Commission. 1996.
- [2] Comments received from the Texas Natural Resource Conservation Commission dated August 25, 1999.
- [3] Local Government Code. Chapter 240, Subchapter Z, Miscellaneous Provisions, Regulation of Outdoor Burning
- [4] Comments received from the Texas Natural Resource Conservation Commission dated September 28, 2000.

Special Note:

- This survey was reviewed by the Texas Natural Resource Conservation Commission. For more information, contact Phil Harwell, TNRCC, P.O. Box 13087, 12100 Park 35 Circle, Austin, TX, 78711-3087.

Smoke Management Program Component	State
	Texas
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Texas Natural Resources Conservation Commission (TNRCC) is in charge of overseeing all outdoor burning. [1]• Each county during drought conditions may prohibit or restrict outdoor burning. [3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none">• The regulations are not clear about the coordination between the Texas Natural Resources Conservation Commission and other jurisdictions.• The regulations do state that outdoor burning for training fire-fighting personnel should be authorized by either the local air pollution control agency or the appropriate commission regional office. [1]• The regulations also state that for prescribed burning for forest management purposes, the Texas Forest Service must be notified and, when possible, the appropriate commission regional office should be notified. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none">• The Outdoor Burning Rule is the State's smoke management program and compliance with the requirements is mandatory to have an authorized burn. [2]

Smoke Management Program Component	State
	Texas
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The regulation covers all burns, which includes prescribed burning. [2]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • The Texas Forest Service must be notified prior to prescribed burning for forest management purposes. When possible, the appropriate commission regional office should also be notified, although it is not required. [1] • Most open burning is allowed in accordance with the regulations or by orders or permits of the commission. If possible in some cases, the appropriate commission regional office should be notified of the burn, although it is not required. [1] • Outdoor burning for training fire-fighting personnel must be requested in writing to the local air pollution control agency or the appropriate commission regional office. [1] • Prior to any coastal salt-marsh management burning, verbal or written notification must be made to the appropriate commission regional office. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Outdoor burning conducted within the parameters of the regulations is authorized. • Outdoor burning not authorized by the regulations may be authorized by written permission from the executive director if there is no practical alternative and burning will not cause or contribute to a nuisance, traffic hazard, or to a violation of any federal or state primary or secondary ambient air standard. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • The regulations do not specify whether operating agreements have been established between the TNRCC and large land managers. [1] • Legislation created a Prescribed Burning Board within the Texas Department of Agriculture to establish curriculum and standards for prescribed burning certification program. [3]
<i>Minimizing Air Pollutant Emissions</i>	

Smoke Management Program Component	State
	Texas
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> The regulations do not discuss alternatives to fire that can be used as a land management tool, but the regulations only allow open burning when no practical alternative to burning exists for the following: right-of-way maintenance, land clearing operations, maintenance along water canals, crop residue burning for agricultural management purposes, and for brush, trees, and other plant growth causing a detrimental public health and safety condition [1]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> Anyone performing outdoor burning must not burn electrical insulation, treated lumber, plastics, non-wood/demolition materials, heavy oils, asphaltic materials, potentially explosive materials, chemical wastes, and items containing natural or synthetic rubber. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> The regulations do not specify whether actions taken to minimize emissions before and during fires must be documented. [3][4]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> The regulations specify that for salt marsh burns the land manager must register all land on which burning will be conducted and provide a map which identifies significant points such as roads, canals, etc. and large acreage. The map must be subdivided into manageable blocks and each block must be identified. The TNRCC uses these maps to determine if the burn will potentially impact any sensitive receptors. The way the TNRCC rule is structured for salt marsh burns, the submission of the map and compliance with the meteorological constraints in the rule as well as the authorization requirements constitutes a burn plan. [1][2]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> The regulations specify that burning must be commenced and conducted only when wind direction and other meteorological conditions are such that smoke and other pollutants will not cause adverse effects to any public road or highway, landing strip, navigable water, or off-site structure containing sensitive receptor(s). [1] It is required that burning must be conducted in compliance with the following meteorological and timing considerations: (1) Burning must commence no earlier than one hour after sunrise and be completed on the same day not later than one hour before sunset; (2) Burning must not be commenced when surface wind speed is predicted to be less than six miles per hour or greater than 23 miles per hour during the burn period; and (3) Burning must not be conducted during periods of actual or predicted persistent low-level atmospheric temperature inversions. [1]

Smoke Management Program Component	State
	Texas
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> The regulations require the notification and approval of adjacent land occupants if the burn will be within 300 feet of the property line unless the burn is conducted downwind from the sensitive receptor. [1][2]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> If at any time the burning causes or may tend to cause smoke to blow onto or across a road or highway, it is the responsibility of the person initiating the burn to post flag-persons on affected roads. [1] If smoke from open burning has the potential to create a nuisance or traffic hazard condition the fire must be extinguished. [1][2]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> The regulations do not discuss whether air quality impacts of fires must be monitored. [3][4]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> The regulations do not discuss whether a public education and awareness program has been established. [3][4]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> The regulations do not discuss what actions may be taken by the TNRCC to monitor compliance with the regulations. [3][4]

Smoke Management Program Component	State
	Texas
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • The regulations do not discuss what penalties are authorized for non-compliance, but do state that any person conducting outdoor burning under the regulations is not exempt from responsibility for consequences of outdoor burning. [1] • The TNRCC has the statutory authority to levee administrative or civil penalties for any violation of the regulation. Administrative penalties can range as high as \$10,000 per occurrence per violation and civil penalties can go as high as \$25,000. [2]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • The regulations do not require post burn reports. [3][4]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • The regulations do not require a review of effectiveness. [3][4]
21. What are the review criteria?	<ul style="list-style-type: none"> • The regulations do not specify review criteria. [3][4]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The regulations do not specify any special protection zones. [3][4]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The regulations do not specify any performance standards. [3][4]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • The regulations do not specify what additional criteria should be used when performance standards have been exceeded. [3][4]

Smoke Management Program Component	State
	Texas
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The TNRCC has a welfare-based nuisance rule which precludes any person from discharging an air contaminant in such concentration and of such duration as to interfere with the normal use and enjoyment of a landowner's property. Nuisance conditions are established by the investigator, who must document that the observed conditions were of sufficient concentration and duration as to constitute a nuisance condition. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • Subchapter B has been submitted as part of the SIP. [2]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • General Appropriations. [2]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The TNRCC is in the process of developing a statewide inventory. [2]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Not at this time. [2]

Smoke Management Program Component	State
	Texas
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Not at this time. [4]

Source of summary information:

- [1] Outdoor Burning Regulation Compliance Registration and Checklist.
- [2] Diana Stevens, Galveston County Health District; personal communication with Barbara Bauer, EC/R Incorporated, on June 5 and July 7, 2000.
- [3] Comments received from Galveston County Health District on July 31, 2000.

Other available information:

- Outdoor Burning Ordinance of the City of Santa Fe, Texas.
- Outdoor Burning Regulations of the City of Dickinson, Texas.
- League City, Texas Burning Code.

Special Note:

- This survey was reviewed by the Galveston County Health District. For more information, contact Diana Stevens, Galveston County Health District, 1207 Oak Street, La Marque, TX, 77568.

Smoke Management Program Component	Galveston County
	Texas
Authorization to Burn	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• Galveston County Health District (GCHD) requires burners to complete and submit an Outdoor Burning Regulation Compliance Registration and Checklist form (Checklist) to the GCHD. The checklist helps burners understand the State regulations. [1][2]• If a burn site is within the corporate limits of a city or a town, the burner must contact the City Fire Marshall for directions on their burn approval process. [1]

Smoke Management Program Component	Galveston County
	Texas
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> Galveston County follows the State Regulations and Guidelines for open burning. Counties and cities within the State of Texas may pass rules consistent with the State regulations that can be more stringent. Within Galveston County, the City of Dickinson, the City of Santa Fe, and League City are examples of municipalities that have passed more stringent local rules. [2] Copies of the Checklist are sent to the local fire and law enforcement officials having jurisdiction in the location of the burn. [1]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> No. [3]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> The Checklist covers open burning for brush and untreated wood and lists the materials which may not be burned. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> Burners must complete and submit the Checklist to the GCHD. The completed Checklist determines if the proposed burn will meet the stipulations of exemption. [1] Burners must contact their local fire and law enforcement dispatch the morning of the burn. [1] If a burn site is within the corporate limits of a city or a town, the burner must contact the City Fire Marshall for directions on their burn approval process. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> The burn must be in compliance with all State and local regulations. [2]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> No. [3]
• <i>Minimizing Air Pollutant Emissions</i>	

Smoke Management Program Component	Galveston County
	Texas
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • No steps are taken to consider alternatives to fire as a land management tool. [3]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Burning can only be conducted when the wind direction and other weather conditions are such that the smoke will not present a hazard to any public road, landing strip, navigable water, or have an adverse effect on any off-site structure such as a house or business. [1] • Winds should be between 6 and 23 mph. [1] • The burn site must be downwind of or at least 300 feet away from any neighboring house or business. [1] • Burning must occur between one hour after sunrise and end the same day no later than one hour before sunset. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • No. [3]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • No. [3]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • Does not apply. [3]

Smoke Management Program Component	Galveston County
	Texas
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • No. [3] • The available information does not discuss if the affected public must be notified of planned fires; however, prior written approval of a resident or business owner is required to obtain a waiver to burn less than 300 feet from their house or business. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • If smoke begins to impact a road, a flag-person must direct traffic while the fire is being extinguished. [1]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • No. [3] • Although the available information does not specifically discuss how fires must be monitored, the burner must be present during all phases of the burn. [1]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • No. [3]
<i>Surveillance and Enforcement</i>	

Smoke Management Program Component	Galveston County
	Texas
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The GCHD investigates complaints and may write a notice of violation, ask the burner to extinguish the fire and may recommend that the complainant call the local Sheriff's Dept. [2] • The GCHD maintains a data base of burners that is used to help enforce the State regulations. [2]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • The Sheriff's Department may issue a ticket for \$200-300 if a valid complaint is received. [4] • The GCHD may do an investigation, issue notices of violation, and refer the burner to the TNRCC for enforcement. [4] • Any variation from the conditions listed in the Checklist constitutes an illegal burn and makes the burner subject to fines for violating the State Burning Laws. [1] • In all cases, the burner is ultimately liable for damages, injuries or other consequences that may result from burning. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • No. [3]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • No. [3]
21. What are the review criteria?	<ul style="list-style-type: none"> • Does not apply. [3]
Optional Air Quality Protection	
22. Does the program establish any "special protection zones"? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The Checklist limits the location of the burn site to either downwind or at least 300 feet away from any neighboring house or business. • Burning can only be conducted when the wind direction and other weather conditions are such that the smoke will not present a hazard to any public road, landing strip, navigable water, or have an adverse effect on any off-site structure such as a house or business. [1]
23. Does the program establish any "performance standards"? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • No. [3]

Smoke Management Program Component	Galveston County
	Texas
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Does not apply. [3]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The provisions of the Texas Clean Air Act (V.T.C.A., Health and Safety Code §382.001 et seq.) grants to cities certain powers to enact and enforce ordinances regulating air contaminants and air pollution. Several cities within Galveston County have passed more stringent outdoor burning ordinances. The City of Santa Fe is an example of a municipality within Galveston County that has passed a local ordinance that discusses burning nuisances. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • No. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Information not provided.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • No. [3]

Smoke Management Program Component	Galveston County
	Texas
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• No. [3]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• No. [3]

Source of summary information:

- [1] Prescribed Burn Plan Form (provided by Michael Shively, Texas Agricultural Extension Service, Harris County).
- [2] Michael Shively, Texas Agricultural Extension Service, Harris County; personal communication with Barbara Bauer, EC/R Incorporated, on June 12, 2000.
- [3] Frequently Asked Questions. Available at <http://www.hd.co/harris.tx.us/pcd/faq.htm>.

Special Notes:

- Harris County Texas does not require permits nor written burn plans for legal burns. There are no local burning regulations; the County follows Texas State Regulation 1 Chapter 111, Visible Emissions for open burning.

Smoke Management Program Component	Harris County
	Texas
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	• The Texas Agricultural Extension Service, Harris County Extension Office (HCEO) is the central authority for burning in Harris County. [2]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	• The HCEO coordinates with the Texas Natural Resource Conservation Commission (TNRCC) and the Harris County Pollution Control Board. [2]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	• The available information does not discuss a SMP and written burn plans are not required. [2]

Smoke Management Program Component	Harris County
	Texas
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The HCEO may prepare prescribed burn plans for agricultural and wildland burns. [2]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Burners must comply with the TNRCC regulations. [2] • Under certain circumstances, a prescribed burn plan is prepared by the HCEO prior to burning. [2]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • The burner must notify the following: Tomball Fire Dept.; the affected neighbors or sensitive receptors; the Tomball Police Dept and Harris County Sheriff's Dept. and Constable Pct. 4; the TNRCC Regional Office; and the Harris County Pollution Control Dept 24 hours prior to burning. [1] • The landowner must supervise the burn. [2]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Information not provided.
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Information not provided.
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	Harris County
	Texas
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	Harris County
	Texas
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Under certain circumstances, a prescribed burn plan is prepared by the HCEO. [2]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • The landowner must supervise the burn. [2]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • The burn plan requires that affected neighbors or sensitive receptors be notified 24 hours prior to the burn. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • Information not provided.
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • The landowner must supervise the burn. [2] • The TNRCC may evoke authorization to burn if the burning causes a violation of any air quality standard. [1]

Smoke Management Program Component	Harris County
	Texas
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Open burning information is available to the public on the Internet. [3]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The available information does not discuss what actions can be taken by the central authority to monitor compliance with the smoke management program.
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • The TNRCC may evoke authorization to burn if the burning causes nuisance conditions, is not conducted in accordance with the burn plan, violates any provision of an applicable permit, or causes a violation of any air quality standard. [2]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Information not provided.
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • Information not provided.
21. What are the review criteria?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	Harris County
	Texas
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The available information does not discuss special protection zones; however, affected neighbors and sensitive receptors must be notified prior to a burn. [2]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • Information not provided.
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Information not provided.
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The TNRCC may evoke authorization to burn if the burning causes nuisance conditions. [2]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Information not provided.

Smoke Management Program Component	Harris County
	Texas
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	• Information not provided.
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	• Information not provided.
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	• Information not provided.
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	• Information not provided.

Source of summary information:

- [1] Utah Smoke Management Plan, Revised March 23, 2000, at www.utahsmp.net
- [2] Memorandum of Understanding (MOU) for Utah Smoke Management Plan and Emissions Inventory Development, March 30, 1999.
- [3] Comments received from the Utah Division of Air Quality dated August 8, 2000.

Special Note:

- This survey was reviewed by the Utah Department of Environmental Quality. For more information, contact Greg Zschaechner, UDEQ, Division of Air Quality, 150 North 1950 West, Salt Lake City, UT, 84114-4820.

Smoke Management Program Component	State
	Utah
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Smoke Program Coordinator is responsible for the daily operation and management of the SMP and is the decision making authority that provides the communication necessary to implement, after consulting with the Utah Division of Air Quality (DAQ), necessary burn approval or denial decisions. [1]• The DAQ is beginning the rule making process that will place a smoke management rule to govern the program. [3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none">• A formal MOU is in place that is an agreement that voluntarily commits the signatories to abide by the SMP. [2]• The signatories of the MOU are: National Park Service, U.S. Bureau of Land Management, U.S. Forest Service, Utah Department of Environmental Quality– Division of Air Quality, Utah Department of Natural Resources, and U.S. Fish and Wildlife Service. [2]• We don't have any formal MOUs in place that establish procedures for regional coordination. But courtesy calls are made to adjacent states if any smoke impacts could occur from prescribed fires or WFURBs in Utah. [3]

Smoke Management Program Component	State
	Utah
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Participation in the SMP is required for all signatories to the MOU and to landowners who use prescribed fire on lands where the DNR provides fire protection during the June-October fire season, with the exception of landowners burning less than 20 acres and are permitted through the DNR's Division of Forestry, Fire and State Lands. [1] • Utah is currently in the process of establishing smoke management rules. The proposed rules do not refer to the SMP, but the SMP still exists and provides supplemental information to reporting forms. Utah's open burning rules are not being revised. Therefore, land managers that are disposing of tree cuttings and slash due to harvesting operations are subject to R307-202-5, Permissible Burning– With Permit. [3]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The SMP covers prescribed fire, wildland fire used for resource benefits, and wildland fire. [1] • The SMP does not apply to agricultural outdoor burning and open burning. [1]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • Each year, land managers who prescribe burn more than 50 acres per year must submit the Utah Annual Burn Schedule to the Smoke Program Coordinator at the DAQ. [1] • Land managers are required to submit a Burn Request form to the Smoke Program Coordinator for approval by 1000 hours two business days before the beginning of the prescribed burn. The form must include: a) the three letter ID and project number consistent with the Utah Annual Burn Schedule; b) the date submitted and by whom; and c) the Burn Manager conducting the burn and phone numbers. [1] • Land managers burning prescribed fires covering up to 20 acres per day or resulting in air emissions of less than 0.5 tons of particulate matter (PM) per day (de minimis prescribed fires) are required to notify the Smoke Program Coordinator the morning of the burn. [1]

Smoke Management Program Component	State
	Utah
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • Burn approval will be made using all available information regarding the prescribed burn, forecast meteorological conditions, and existing air quality. The criteria for making burn approval decisions include, but are not limited to: a) analysis of emissions from prescribed fires in progress and residual emissions from prescribed fires on a daily basis; b) analysis of emissions from active wildland fire used for resource benefits and consideration of potential long-term emissions estimates; c) analysis of the emissions from wildland fires greater than 100 acres of timber, or 300 acres of brush; d) local burn conditions; e) fire prescription including smoke management considerations from the applicable Burn Plan; f) existing and predicted local air quality; g) local and synoptic meteorological conditions; h) type and location of areas to be burned; i) protection of the national visibility goal for Class I areas; j) minimization of smoke impacts in Class I areas, roads or highways, airports, areas that are nonattainment for PM or CO, or other smoke sensitive areas; k) protection of the NAAQS; l) and analysis of smoke transported from areas outside Utah. [1] • For de minimis prescribed fires, ignition can only occur when the Weather Service Clearing Index is above 500. [1]
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Since the central authority is the Smoke Program Coordinator that receives direction from the SMP, there is no need to have operating agreements other than stated in the SMP. [3] • The SMP does not set burner qualifications. Each agency sets their own qualifications. [3] • Smoke management training is available through courses taught regionally at NIFC and depending on need, locally arranged. [3]

Smoke Management Program Component	State
	Utah
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Land managers are encouraged in the SMP to implement emission reduction and dispersion techniques as feasible. Techniques are submitted in the Daily Emission Report. [3] • An incentive of using emission reduction is having additional opportunities to utilize an airshed for burning. [3] • Only the emission reduction technique used is tracked. [3]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • Each land manager conducting prescribed fires must implement as many emission reduction and dispersion techniques as feasible. The following emission reduction and dispersion techniques may be considered best smoke management practices: 1) reducing biomass and providing information to the public on the adverse impacts of using green or wet wood as fuel; 2) burning in seasons characterized by meteorological conditions that allow for good smoke dispersion; 3) using mass ignition techniques; 4) igniting burns under good-to-excellent ventilation conditions and suspending operations under poor smoke dispersion conditions; 5) considering smoke impacts and residual smoke on activities conducted by local communities and land users; 6) burning only those wildland fuels essential to meet management objectives; 7) minimizing duff consumption, smoldering, and large wildland fuel consumption through wildland fuel moisture considerations; 8) minimizing dirt content when slash piles are constructed; 9) burning piles when other burns are not feasible, such as in snow or rain; 10) using opportunities that meet the burn prescription at all burn locations to spread smoke impacts over a broader time period and geographic area to minimize smoke impacts to protect public health, public safety, and visibility; 11) burning during optimum periods to prevent trapping smoke in inversions or diurnal wind flow patterns; 12) consolidating burning material to enhance wildland fuel consumption and to minimize smoke production; 13) implementing maintenance burning in periodic rotation mimicking natural fire cycles; 14) managing smoke impacts. [1]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • Following a prescribed burn, land managers are required to submit a Daily Emission Report to the Smoke Program Coordinator which must include the emission reduction techniques used for the burn. [1] • This information is used for a year end statistical summary to demonstrate techniques used and their levels of success. [3]

Smoke Management Program Component	State
	Utah
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Each year, land managers who prescribe burn more than 50 acres per year must submit the Utah Annual Burn Schedule to the Smoke Program Coordinator at the DAQ. [1] • The Utah Annual Burn Schedule must include: project number, project name, Air Quality Basin, location, de minimis category, total project acres, project elevation, major fuel model, type of burn (understory, broadcast, etc.), earliest burn date, burn duration, ignition method (helitorch, hand drip torch, etc.), and county. [1] • Prescribed fires covering more than 20 acres per day or producing emissions more than 0.5 tons of PM per day must submit the Pre-burn Information form to the Smoke Program Coordinator at least two weeks prior to the ignition window. [1] • The Pre-burn Information form must contain the following: a) the three-letter ID, project number, date submitted, name of person submitting the form, Burn Manager, and phone numbers; b) summary of burn objectives; c) Class I or Non-Attainment Area within 15 miles; d) sensitive receptors and distance/degrees from project site; e) planned mitigation methods (avoidance, dilution, emission reduction); f) smoke dispersion model used; g) estimated range of total PM anticipated; and h) optional information on loading and fuel moisture available. [1] • Written burn plans are required to be submitted for burns above the de minimis levels. Each agency has established requirements for burn plans. [3]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • All parties are committed to comply with the Clean Air Act and the best management practices available regarding emission production and reduction, and regional haze issues. [1] • The criteria for making prescribed burn approval decisions include, but are not limited to: protection of the national visibility goal for Class I areas; and minimization of smoke impacts in Class I areas, roads or highways, airports, areas that are nonattainment for PM or CO, or other smoke sensitive areas. [1] • Coordination with adjacent states along with taking into consideration on-going national fires and regional weather. [3]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • Land managers and the DAQ are responsible for providing public notification and education related to the SMP, as needed. The public education and notification program will include smoke impacts from prescribed fires, wildland fire, and wildland fire used for resource benefits. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • If it is determined by the Smoke Program Coordinator that the prescribed fire, wildland fire used for resource benefits, and/or smoke transported from other locations is degrading air quality levels, the land manager will promptly initiate actions to reduce or eliminate smoke production by stopping ignition actions on existing prescribed fires and by curtailing additional prescribed or wildland fire used for resource benefits. [1]

Smoke Management Program Component	State
	Utah
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • Land managers will monitor effects of a prescribed fire on smoke sensitive receptors, and visibility in Class I areas. Visual monitoring and documentation of the direction of the smoke plume may be performed using the Hourly Plume Observation Record form or an agency equivalent. [1] • Monitoring of nuisance complaints by the public should be noted and recorded in the project file. [1] • For large prescribed fires expected to last more than one day, or fires close to smoke sensitive receptors, locating real-time particulate matter monitors may be warranted to facilitate timely response to smoke impacts. [1]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • Land managers and the DAQ are responsible for providing public notification and education related to the SMP, as needed. The public education and notification program will include smoke impacts from prescribed fires, wildland fire, and wildland fire used for resource benefits. [1] • Land managers and the DAQ are responsible for providing public notification and education on the role of prescribed fire and wildland fire used for resource benefits to accomplish land management objectives. [1]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • Land managers conducting a prescribed fire will permit DAQ staff to enter and inspect burn sites before, during and after burns to verify the accuracy of the permit or burn plan information and compliance with the burn plan, if appropriate. [1]
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Failure to comply with the procedures and conditions specified in the permit or burn plan may result in an enforcement action, such as, a cease and desist order. [1]

Smoke Management Program Component	State
	Utah
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> By 8:00 A.M. the day following a prescribed burn, land managers are required to submit a Daily Emission Report to the Smoke Program Coordinator. The report will include the following: 1) the three letter ID and project number; 2) date submitted and by whom; 3) burn start date and end date with time; 4) emission information (black acres, tons fuel consumed per acre, tons particulate matter produced; 5) public interest regarding smoke; 6) daytime ventilation; 7) nighttime smoke behavior; 8) smoke management prescription or WFIP/Resource Benefit Fire Plan met; 9) emission reduction techniques used; and 10) optional– dead and live fuel moisture information with average depth of fuels. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> The Utah Airshed Group, which includes each signatory of the MOU, meets at least once a year to evaluate the effectiveness of the SMP. [1]
21. What are the review criteria?	<ul style="list-style-type: none"> Criteria will be determined from elements of the SMP. [3]
Optional Air Quality Protection	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> Areas of non-attainment are identified in the SMP in Appendix F by county lines. [3]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> As the smoke management program develops, performance standards will be established as levels of PM are categorized. [3] An evaluation is made on the post-burn report, known as the Daily Emissions Report, regarding whether the smoke management prescription is met. The land manager provides a narrative on whether the smoke management prescription was met. [3]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> No additional smoke management requirements are imposed, since the evaluation is made after the burn is conducted. But, the evaluation is made in order to improve the smoke management techniques. [3]

Smoke Management Program Component	State
	Utah
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • Salt Lake County has a regulation titled “Air Pollution Nuisance”, that states that “No person shall cause or permit the discharge from any source whatsoever such quantities of air contaminants...which will cause a nuisance to any person or the public.” [3] • Complaint calls received by the DAQ will be forwarded to the land manager. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • No the SMP is not part of the PM₁₀ SIP. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Funding for the smoke program comes from contributed funds by agencies that have signed the MOU. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The SMP will summarize total PM from the Daily Emissions Reports that are based on actual consumption. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • Not at this time. When these techniques can be quantified, then the reduced emissions will be quantified. [3]

Smoke Management Program Component	State
	Utah
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • The SMP of Utah has been certified by the EPA on November 8, 1999. [3]

Source of summary information:

- [1] Washington State Department of Natural Resources Smoke Management Plan. 1993, 1998.
- [2] Washington Smoke Management Plan Summary. 1997.
- [3] Comments received from the State of Washington, Department of Natural Resources dated August 23, 1999.
- [4] Comments received from the State of Washington, Department of Ecology dated August 20, 1999.
- [5] Comments received from the State of Washington, Department of Natural Resources dated July 14, 2000.

Special Note:

- This survey was reviewed by the Washington Department of Natural Resources. For more information, contact Mark Gray, WDNR, 111 Washington Street S.E., P.O. Box 47000, Olympia, WA, 98504-7000.

Smoke Management Program Component	State
	Washington
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none">• The Washington Department of Natural Resources (DNR) Region Managers are responsible for making burn/no burn decisions on lands that are protected by the DNR. [1]• The DNR's authority is for silvicultural burning on forest land receiving fire protection from DNR only. The Department of Ecology (DOE) should be consulted for information on regulatory authority on all other forms of burning. [3][5]• Federal land managers are responsible for making burn/ no burn decisions on lands not protected by the DNR.[1]• The DNR's Resource Protection Division, Smoke Management Section, must give smoke management approval before a Region or Land Manager can approve a burn. [1]

Smoke Management Program Component	State
	Washington
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • Indian nations may choose to participate in the Washington State DNR Smoke Management Plan (SMP) through a written agreement with the DNR, which gives the Indian nations the advantage of statewide coordination with other silvicultural burners. No tribes have chosen to participate. [1][5] • There are currently no tribes participating in the SMP. DNR coordinates wildland fire activities with the state of Oregon, and Federal land managers (including the Bureau of Indian Affairs) through the Oregon and Washington Wildland Fire Agreement. [3] • The DNR also has agreements with local authorities to coordinate regulations. [3] • The DNR does not formally coordinate with adjacent states or tribes as part of the SMP. Regional coordination occurs through the Pacific Northwest Wildfire Coordinating Group which includes tribal participation through the Bureau of Indian Affairs. Informal coordination is strongest with Oregon. [4]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Those who receive fire protection from the DNR must participate in the SMP. [1] • Federal agencies that do outdoor burning on forest lands must participate in and abide by the requirements of the DNR SMP. [1] • If a landowner has a proposal that does not conform to the SMP, the landowner may request an exception. [1] • The SMP applies on all state and most private and Federal lands. The SMP is optional on tribal forest lands. It does not apply to naturally-ignited, prescribed fires in wilderness areas or national parks. [4]
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The SMP covers DNR-regulated forest land prescribed outdoor burning. [1] • The program does not apply to agricultural burning or outdoor burning on improved property. [4]

Smoke Management Program Component	State
	Washington
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • A burn permit application form must first be completed and a permit must be issued by the DNR for all burns on lands protected by the DNR. For small fires, the permit application form itself is sufficient. For large fires, the application must also include: (1) A supplemental data sheet with pre-burn data; (2) Provisions for gathering and submitting post-burn data; and (3) A burn plan, if referenced on the face of the permit application. [1] • Large fires (\$100 tons of fuel) – <ul style="list-style-type: none"> – Lands protected by the DNR: Pre-burn data is entered into the smoke management tracking system*. On the afternoon before the burn, the Region Manager is responsible for screening, pre-authorizing, and prioritizing the burns submitted for the following day. On the day of the burn, the DNR Smoke Management Section posts a list of authorized burns for that day and the Region Manager makes the final decision about which burns receive final approval. [1] – Federal and participating tribal lands: Pre-burn data is entered into the smoke management tracking system*. On the afternoon before the burn, the Land Manager is responsible for pre-screening and prioritizing the burns submitted for the following day. On the day of the burn, the DNR Smoke Management Section contacts the Land Manager about burns that are approved and the Land Manager makes the final approval for burning. [1] – The DNR tells the land manager yes or no on the day of the burn, and the land manager has no choice unless the DNR says it is OK for that day. [4] • Small fires– All persons who propose to burn small fires must first call a burn hotline and follow the instructions that apply for the day and location of the proposed burning. [1]

Smoke Management Program Component	State
	Washington
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • No fire shall be ignited when the DOE has declared an air pollution episode for the geographic area pursuant to chapter 173-435 WAC; or the DOE or a local air pollution control authority has declared impaired air quality for the geographic area in which the burning is to be done. [4] • The following criteria are from WAC 332-24-205 (Washington Smoke Management Plan Appendix 15): silvicultural burning is not allowed within nonattainment areas of the state as established by Washington Department of Ecology for particulate matter ten microns or less or carbon monoxide, except for: (a) fires for improving and maintaining fire dependent ecosystems; (b) fires for training wildland fire fighters; (c) fires set for a defined research project; (d) military training exercises; (e) the exclusive purpose of managing storm or flood-related debris; or (f) where exempted by local or state air pollution control agencies. [4] • Large fires– Burns will not be approved if: (1) There is a likelihood of a smoke intrusion into designated areas; (2) There is any likelihood of an over-flight of smoke above a designated area or special public events (but over-flights of smoke may be approved over designated areas on days when visibility would be reduced naturally); (3) Burning will not comply with the SIP of the CAA regarding visibility protection of Class I federal areas; (4) Any state or federal air quality regulations, laws, or rules would be violated; (5) Burning on state and private lands does not meet the requirements of Washington State’s Forest Practice Rules and Regulations relating to threatened or endangered species protection; (6) Burning will cause mandatory emission reduction levels to be exceeded; (7) Burning will knowingly violate another state’s published air quality standards; (8) Smoke will not significantly disperse within eight hours of ignition, and be fully dispersed by 12:00 pm the next afternoon unless it is a multiple day burn. Large fires are also not allowed during certain times of the year. [1] • Multiple day burns – Burns will be approved following the criteria for approving large burns. Additionally, three months before the burn the landowner must give the DNR sufficient burn plan information. [1] • Small fires– A burn hotline provides a message that either allows burning or suspends burning during instances of poor air quality and high fire danger. The burn or no burn hotline message for air quality is determined from input about air pollution episodes and impaired air conditions gathered from the Department of Ecology. [1][4] • Silvicultural burning is not allowed inside urban growth areas as designated under growth management plans, or in cities of greater than ten thousand population as follows: (a) in urban growth areas where reasonable alternatives exist; (b) in cities with a population of ten thousand or more as established by the office of financial management: (i) that exceed or threaten to exceed federal or state ambient air quality standards; and (ii) where reasonable alternatives to outdoor burning exist, in accordance with WAC 173-425-090; (c) after December 31, 2000, burning shall not be allowed in urban growth areas or cities with a population of ten thousand or more. [4]

Smoke Management Program Component	State
	Washington
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Federal agencies that do outdoor burning on forest lands must participate in and abide by the requirements of the DNR SMP. [1] • Indian nations may choose to participate in the SMP through a written agreement with the DNR. [1] • The Oregon and Washington wildland Fire Agreement, entered into by the States of Oregon and Washington, and the Federal land managers, addresses all aspects of wildland fire. [3] • The DNR, in conjunction with the USFS, will provide training in the operation of computer models that allow burners to analyze proposed burns and prepare burning prescriptions that will produce minimum emissions. [1]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • The SMP requires DNR Region Managers to consider the availability and feasibility of burning alternatives during the permit issuance and burn approval process. [1] • As part of its obligation to encourage alternatives to burning, the DNR will: (1) Gather and distribute information about burning alternatives; (2) Cooperate with alternative disposal industries by bringing together industrial landowners and disposal industries; (3) Consult with local government agencies to determine the availability and cost of legal dumping at approved sites. [1] • Appendix 14 of the SMP contains an extensive discussion of alternative debris disposal techniques described under the following headings: (1) Alternative mechanical treatments; (2) Increased utilization; (3) Chemical; (4) Manual; and (5) No treatment. [1] • The DNR encourages landowners to use alternatives to burning through its Backyard Forest Stewardship program. In Spokane County (the most fire prone area of the state) DNR works in partnership with local fire agencies and business through Fire Safe Spokane Inc. (A 501c3 non-profit corporation) to encourage homeowners to take actions to reduce the risk of wildfire using alternatives to burning. [3] • Emission reductions are tracked by the DNR. The tracking system* includes: mandatory reporting of completed burns, a summary of emissions created by each plan participant, calculation of emissions, and the annual total of emissions produced compared to the targets. [1] • The SMP establishes emission reduction goals based on a calculated emissions baseline. The goal is to reduce burning emissions by 20 percent from 1984 - 1989 baseline levels by December 31, 1994 and then reduce burning emissions by 50 percent from 1984 - 1989 baseline levels by December 31, 2000. [1][5] • The modeling system used to generate the baseline numbers and to calculate and track future emissions is called SMS-INFO. [1]

Smoke Management Program Component	State
	Washington
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • The DNR encourages burners to use techniques such as fans, crane piling, mass ignition, and accelerated mop-up to reduce the amount of visible smoke produced during burning. [1] • Burn permit approval must consider techniques, and favors pile burning over broadcast burning. [4]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • The SMP does not require the actions taken to minimize emissions to be documented, but it does require that the DNR collects burning data from all participants in order to track progress toward the emission reduction targets. This tracking system* includes a summary of emissions created by each plan participant and calculation of emissions. [1] • Burning permits are a form of documentation of actions to minimize emissions before and during fires. Permits can require certain burning techniques in areas close to homes such as crane piling, fans, and mass ignition which minimize emissions. The FLMs do not submit permits to the DNR, but must submit the same pre-burn and post-burn data forms required for other land managers into a computer database. "Pile type" and "ignition method" on these forms help document emissions or potential emission reductions. [4]
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • A written burn plan is required for State and private burns that will consume 100 tons and greater (large fires) in a 24 hour period, and for all burning that requires reporting by other Land Managers. The burn plan must be referenced on the face of a burning permit, which is required for burning on DNR-protected lands, and becomes part of the permit conditions. [1] • The burn plan must provide pre-burn data including the permit number, DNR region, burn type, type of landowner, specific location information, property owner's name, reason to burn, size of unit, and predominant species. [1] • Further pre-burn information must be provided for pile/landing or broadcast/underburn burns. For pile/landing burns, this includes pile/landing tons, pile calculation method, and pile type. For broadcast/underburn burns, this includes loading method, duff depth, slope, cut date, snow off date, and ignition method. [1] • Post-burn data must also be provided. The date burned, ignition time, and actual acres burned must be provided for all burns. Consumed pile tons and consumed landing tons must be provided for pile/landing burns. And for broadcast/underburn burns, ignition duration, weather data, number of days since significant rainfall, wind speed, fuel moisture, and 1000 hour method information must be provided. [1]

Smoke Management Program Component	State
	Washington
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the "National Visibility Goal?"	<ul style="list-style-type: none"> • The SMP general burning requirements state: (1) Smoke from burning must not obscure visibility on public roads and highways; and (2) Smoke from burning must not cause a nuisance, which exists when emissions from any open fire causes physical discomfort or health problems to people residing in the vicinity of the burning or physical damage to property. [1] • Large burn approvals will include consideration of dispersal criteria and objectives. The Smoke Management Section predicts large scale dispersion potential and Regions include local knowledge of inversion and local dispersal patterns for individual burn sites. [1] • National Weather Service meteorologists provide synoptic weather patterns and air stagnation advisories and an Ecology meteorologist makes air quality assessments and predictions based on air quality monitoring and weather data and can prohibit all burning when air quality is impaired. When air quality is adequate, the DNR meteorologist evaluates smoke dispersion conditions based on atmospheric stability, mixing height, and transport winds in addition to local knowledge of wind and weather patterns and best professional judgement from past experiences. [4][5] • Provisions in the SMP for making reasonable progress toward the national visibility goal include: reduced particulate emissions due to mandatory emission reductions; restricted burning during poor air quality days; increased use of alternative methods of debris disposal; and increased use of pile burning techniques. [1] • Multiple day burns between June 15 and October 1 in eastern Washington may be approved by the land manager if specific criteria are met, including land manager certification to the DOE that smoke impacts to Class I areas can be avoided and such consideration is included in the prescription for the burn. [1]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • If the DNR determines that a multiple day burn has the potential to affect communities, the landowner must notify the public of the burn at least one week before they plan to burn. The notification must be published in local newspapers, and may be a paid advertisement, press release, or public service announcement. The notice will list the location, size, and duration of the burn. [1]
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • The SMP does not discuss contingency plans for smoke intrusions. The SMP does state that DNR Region Managers are responsible for reporting and documenting where and when smoke intrusions occur, and must react to citizen complaints about smoke nuisances. A Smoke Intrusion Report must be submitted by the Region Manager to allow for a post-incident evaluation whenever smoke intrusion duration exceeds 30 minutes or if the Region Manager determines the smoke impact on the public warrants submission of the report. [1]

Smoke Management Program Component	State
	Washington
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> Monitoring air quality impacts of fires is the responsibility of the DOE. [3]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> The SMP establishes an education and awareness program to inform small landowners and the general public about burning regulations and emission reduction techniques. DNR field representatives are the center of this effort through daily contact with the public and small landowners while writing burning permits. [1] DNR field representatives will provide written information about rules and regulations, provide on-site training sessions about safe and efficient burning techniques, and answer questions. [1] Region office staff will answer general inquiries or direct questions to field staff for follow-up action. They will also initiate contacts with local news media to generate feature stories about the burning program and regulations. The Regions will also include information about burning in displays used at public gatherings. [1] The DNR will provide press releases and public service announcements, and distribute them to all media outlets. The DNR will also coordinate with other agencies' public affairs offices. [1] The Resource Protection Division will develop brochures and other printed materials to be used by the Region offices. It will also seek sponsors to distribute information materials supplied to them by the DNR. [1]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> DNR Region Managers are responsible for ensuring that field enforcement is conducted and consistently applied. After contact with a permit applicant, it may be determined that a site inspection is necessary before issuing the permit. Also, prior to burning, Regions will audit 5 percent of the burn sites that did not receive a site inspection. [1]

Smoke Management Program Component	State
	Washington
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • Authorized penalties for non-compliance include refusal to issue future burning permits, and fines. [1] • Any person burning on forest land without complying with chapter DNR outdoor burning rules is in violation of the forest protection statute and the state clean air act. Convictions or bail forfeitures in connection with illegal burning under DNR outdoor burning rules may result in refusal to issue further permits for a two-year period from the date of the illegal burning. In addition to any other fines and penalties that may be imposed, the department may charge and recover costs from the person responsible for any response to control or extinguish an illegal fire caused in part or in whole by negligent acts or omissions. [3]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • Post-burn data must be provided as part of a written burn plan. The date burned, ignition time, and actual acres burned must be provided for all burns. Consumed pile tons and consumed landing tons must be provided for pile/landing burns. And for broadcast/underburn burns, ignition duration, weather data, number of days since significant rainfall, wind speed, fuel moisture, and 1000 hour method information must be provided. [1]
Program Evaluation	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • All or portions of the SMP may be further reviewed or updated as warranted. [1] • The 1993 version was reviewed after five years. A review is scheduled for 2000. [3][4]
21. What are the review criteria?	<ul style="list-style-type: none"> • General plan revisions will adopt the same procedure as used for initial adoption. The plan must be developed by DNR in consultation with the department of ecology, public and private landowners involved in silvicultural burning, and members of the public. [3][5]
Optional Air Quality Protection	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The SMP establishes “designated areas” and “sensitive areas”. [1] • Designated areas are established under the responsibility of the Department of Ecology and are defined as critical areas that are otherwise subject to air pollution from other sources. Sensitive areas are defined as areas of heavy recreational use and population centers outside designated areas. [1] • Large burns will not be approved if there is a likelihood of a smoke intrusion into designated or sensitive areas. [1] • See comments on question no. 6. [3]

Smoke Management Program Component	State
	Washington
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • The SMP establishes emission reduction goals based on a calculated emissions baseline. The goal is to reduce burning emissions by 20 percent from 1985 - 1989 baseline levels by December 31, 1994 and then reduce burning emissions by 50 percent from 1985 - 1989 baseline levels by December 31, 2000. [1][5] • The goal is to reduce forest burning emissions other than forest health burning emissions (which are exempted from the emissions caps, but not from the nuisance, visibility, or public health requirements). [4]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • The 1994 target levels have been met (A 50% reduction target has been met every year since 1993). If the 2000 emission reductions are not met, the Department must immediately limit burning that is not for forest health purposes. If necessary, this will be done by implementing a mandatory emissions allocation system. [1][2]
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • If a fire creates a nuisance from smoke or flying ash, it must be extinguished. For purposes of this section, a nuisance exists when emissions from any open fire cause physical discomfort or health problems to people residing in the vicinity of the burning or physical damage to property. [3] • Smoke from burning must not cause a nuisance as defined in WAC 332-24-205 (8), as part of minimum requirements for all burning regulated by the DNR. If the fire creates a nuisance from smoke or flying ash, it must be extinguished. A nuisance exists when emissions from any open fire cause physical discomfort or health problems to people residing in the vicinity of the burning, or physical damage to property. [4]
26. Is the smoke management program, or the regulations authorizing the program, part of the State’s implementation plan (SIP)?	<ul style="list-style-type: none"> • Yes, the SMP is part of the SIP. [3] [4]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • DNR’s outdoor burning program is funded through the state general fund, fire protection assessments on forest land, and burning permit fees. Fees for silvicultural burning are assessed on estimated consumed tons. [3] • The state legislature appropriates funds to the DNR for administration and enforcement of the SMP. Funds are appropriated from the state General Fund, the Air Pollution Control Account, and from property taxes (forest protection assessment). Fees assessed for burning are deposited into the Air Pollution Control Account. Only about 30% of the money needed to administer the SMP and the inseparable outdoor burning regulation program is currently recovered by burning permits. [4]

Smoke Management Program Component	State
	Washington
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The DNR maintains an annual emissions inventory on silvicultural burning. [3] • The DNR maintains an annual air pollutant emissions inventory based on pre-burn and post-burn reports. Pre-burn data include fuel type, fuel loading, duff depth, and county. The post-burn report includes weather, fuel moisture, actual acres burned, and estimated tonnage consumed. This inventory is sent to the Department of Ecology. [4]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No mechanism exists to estimate the emission reduction achieved through not burning. [3] • Air pollution emissions are calculated and recorded in terms of an annual total of PM-10 emissions produced. These forest burning emission records measure statewide compliance with mandated emission reduction goals in the SMP based on a calculated emissions baseline. A 50% emission reduction from this baseline is required by December 31, 2000. This becomes the ceiling level for all future annual emission totals. Annual totals do not currently include tribal forest land or wildfire emissions. Forest-health burning in eastern Washington is exempt from the emissions reduction ceiling. [4]
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	DNR will determine the feasibility of certifying the SMP when the plan is reviewed in 2000. [5]

*Note: Washington's smoke management data tracking system has three allowable methods, which are: (1) The DNR Local Area Network (LAN); (2) The USFS Smoke Management System (SMS); and (3) Fax machine. The LAN is used by the DNR for tracking of data from State and private burning on DNR-regulated lands. The SMS is maintained by the U.S. Forest Service for data tracking, and SMS data is combined with DNR data within the LAN system. Other participants covered by the SMP will enter their data into one of the three systems to be determined by the DNR and the individual participant on a case by case basis. [1]

Source of summary information:

- [1] Wyoming Air Quality Standards and Regulations, Chapter 10, Section 2, Open burning restrictions.
- [2] Personal communication, B. Bauer, EC/R to Mark Arn, WDEQ-AQD, 307-777-7758, October, 27, 1998.
- [3] Comments received from the Wyoming Department of Environmental Quality dated August 20, 1999.
- [4] Comments received from the Wyoming Department of Environmental Quality dated July 24, 2000.

Special Note:

- This survey was reviewed by the Wyoming Air Quality Division. For more information, contact Darla Potter, WAQD, 122 West 25th Street, Herschler Building, 4 West, Cheyenne, WY, 82002.

Smoke Management Program Component	State
	Wyoming
<i>Authorization to Burn</i>	
1. What agency/office has the central authority to make burn/no burn decisions? (Who has the regulatory authority?)	<ul style="list-style-type: none"> • The Wyoming Air Quality Division (AQD) approves applications and issues burn permits for proposed open burning of trade wastes only. The regulations do not contain a definition of trade wastes. [1][3] • Burn permits request notification at least 24 hours prior to each burn. [3]
2. Regional Coordination – With what adjacent State, local, or tribal jurisdiction does the central authority coordinate? Are there formal MOU's in place or more voluntary/courtesy coordination? If so, what does the coordination involve?	<ul style="list-style-type: none"> • The application for open burning of trade wastes must provide evidence that the proposed open burning project has been approved by the fire department which has jurisdiction in the burn area. [1] • There is no regional coordination initiated by the Wyoming Air Quality Division on a routine basis. [4]
3. Is participation in the smoke management program by land managers mandatory? Are there any requirements for burners not covered under the SMP?	<ul style="list-style-type: none"> • Wyoming has not yet developed a Smoke Management Program. [2] • The regulations do not discuss a formal smoke management program. The regulations outline the restrictions and requirements for open burning. [1] • There are no requirements outside of Chapter 10, Section 2 for burners. [4]

Smoke Management Program Component	State
	Wyoming
4. What types of burning (agricultural, silvicultural, other) are covered by the program?	<ul style="list-style-type: none"> • The regulations provide restrictions and requirements for open burning of trade wastes and open burning of plant and forestry wastes. [1] • The open burning of plant life grown on the premises in the course of any agricultural or forestry operation may be permitted when it can be shown that such open burning is necessary and that no fire hazard or public nuisance will occur. [1] In practice, this has been applied to forestry and rangeland operations but not agricultural operations. [3]
5. How do land managers apply for authorization to burn?	<ul style="list-style-type: none"> • For open burning of trade wastes, burners must file an application request with the AQD. Upon issuance of a burn permit by the AQD, the person may proceed with the operation under the modeled conditions with due consideration of the permit conditions. [1][3] • AQD burn permits typically contain three conditions for the applicant to consider during the prescribed burn. Those three conditions are: 1) Burning must be conducted during meteorological conditions for which the air quality analyses indicate compliance with ambient standards. Such burning should occur during periods of maximum dispersion, normally from mid-morning to late afternoon. 2) Impacts to the air quality related values such as visibility must be considered in nearby Class I areas during prescribed burning activities, with additional consideration given to the time of year related to Class I visitor usage. 3) although there are no special considerations directly applicable to nearby communities and towns, ambient standards must be maintained and burning can only be permitted if no public nuisance will occur. [3] • Open burning of plant and forestry wastes is permitted when it can be shown that the open burning is necessary and that no fire hazard or public nuisance will occur. [1]
6. What are the criteria for getting permission to burn?	<ul style="list-style-type: none"> • For open burning of trade wastes, an application must be approved by the AQD. The application must include the following information: 1) name, address, phone# of person submitting application, 2) Type of business or activity involved, 3) description of proposed equipment and operating practices; type, quantity and composition of waste to be burned; and expected composition and amount of air contaminants to be released into the atmosphere (Government agencies submit SASEM run, 4) schedule of burning operations, 5) exact location of burning operations, 6) reasons why no method other than open burning can be used for disposal, and 7) evidence that the proposed open burning has been approved by any fire department which may have jurisdiction. [3] • The criteria used by the AQD to approve or disapprove an application and issue a burn permit are not described in the regulations. [1] • For open burning of plant and forestry wastes, it must be shown that the burn is necessary and that no fire hazard or public nuisance will occur. The regulations provide no further detail regarding how an applicant would show that a nuisance will not occur. [1]

Smoke Management Program Component	State
	Wyoming
7. Have operating agreements been established between the central authority and land managers? Are there any requirements for burner qualifications now or in the future stipulated in your SMP? Is Smoke Management training available?	<ul style="list-style-type: none"> • Operating agreements are not required as compliance with the regulation is not an option [3][4] • There are no requirements for burner qualifications and no smoke management training is made available by the Wyoming Air Quality Division. [4]
<i>Minimizing Air Pollutant Emissions</i>	
8. What steps are taken to consider alternatives to fire as a land management tool? What incentives or disincentives are there for the use of alternatives to burning and emission reduction techniques? Are emission reductions tracked?	<ul style="list-style-type: none"> • Reasons why no method other than open burning can be used for disposal, must be included in the application for open burning of trade wastes. [1] • There are no incentives or disincentives for the use of alternatives to burning and emission reduction techniques. [4] • Emission reductions are not tracked. [4]
9. What actions are required to minimize emissions from fires? What actions are required to minimize impacts from fires?	<ul style="list-style-type: none"> • No actions to minimize emissions are required by the regulation. [3][4] • AQD burn permits typically contain three conditions for the applicant to consider during the prescribed burn. The conditions refer to the consideration of impacts but do not dictate actions required to minimize impacts. Those three conditions are: 1) Burning must be conducted during meteorological conditions for which the air quality analyses indicate compliance with ambient standards. Such burning should occur during periods of maximum dispersion, normally from mid-morning to late afternoon. 2) Impacts to the air quality related values such as visibility must be considered in nearby Class I areas during prescribed burning activities, with additional consideration given to the time of year related to Class I visitor usage. 3) Although there are no special considerations directly applicable to nearby communities and towns, ambient standards must be maintained and burning can only be permitted if no public nuisance will occur. [4]
10. Must the actions taken to minimize emissions before and during fires be documented? How is this information used?	<ul style="list-style-type: none"> • No. [3]

Smoke Management Program Component	State
	Wyoming
<i>Smoke Management Components of Burn Plans</i>	
11. Are written burn plans required by the SMP? What information must be included?	<ul style="list-style-type: none"> • Upon issuance of a burn permit by the AQD, the person may proceed with the operation under the modeled conditions with due consideration of the permit conditions. [3] • Burners must file an application request with the AQD which must include the following: (1) The name, address and telephone number of the person submitting the application, (2) The type of business or activity involved, (3) A description of the proposed equipment and operating practices, the type, quantity, and composition of wastes to be burned, and the expected composition and amount of air contaminants to be released into the atmosphere, (4) The schedule of burning operations, (5) The exact location where open burning will be used to dispose of the waste, (6) Reasons why no method other than open burning can be used for disposal, and (7) evidence that the proposed open burning has been approved by any fire department which may have jurisdiction. Upon approval of the application by the AQD, the person may proceed with the operation without being in violation of the regulations. [1] • Open burning of plant and forestry wastes is permitted when it can be shown that the open burning is necessary and that no fire hazard or public nuisance will occur. No written burn plan is required. [1]
12. How must smoke dispersion conditions be evaluated? How are visibility impairments and/or regional haze accounted for in your SMP? Do burn/no burn decisions consider visibility, regional haze, or the “National Visibility Goal?”	<ul style="list-style-type: none"> • The regulations do not discuss if or how smoke dispersion conditions must be evaluated. [1] • AQD burn permits typically contain the following conditions for the applicant to consider during the prescribed burn: 1) Burning must be conducted during meteorological conditions for which the air quality analyses indicate compliance with ambient standards. Such burning should occur during period of maximum dispersion, normally from mid-morning to late afternoon. [3] • Government agencies must submit a SASEM run with the burn application. The burn permit then states “The Division has reviewed the SASEM results included with you request and hereby grants permission to conduct the requested burn under the modeled conditions which predict no violation of the ambient standards with due consideration of the permit conditions listed above.” [3] • No accounting for visibility impairments or regional haze are required by the regulation. [4] • AQD burn permits typically contain the following condition for the applicant to consider during the prescribed burn: 1) Impacts to the air quality related values such as visibility must be considered in nearby Class I areas during prescribed burning activities, with additional consideration given to the time of year related to Class I visitor usage. [4]
13. Must the affected public be notified of planned fires? Please describe.	<ul style="list-style-type: none"> • The regulations do not discuss if the affected public must be notified when fires are authorized. [1] • The fire department that has jurisdiction in the area must be notified. [3]

Smoke Management Program Component	State
	Wyoming
14. Are contingency plans required to reduce exposure to smoke if intrusions occur? What are the criteria for implementing such plans?	<ul style="list-style-type: none"> • No. [3] • AQD burn permits typically contain the following conditions for the applicant to consider during the prescribed burn: “Although there are no special considerations directly applicable to nearby communities and towns, ambient standards must be maintained and burning can only be permitted if no public nuisance will occur”. [3]
15. Must the air quality impacts of fires be monitored? Who is responsible for monitoring? What is being monitored? What are the requirements? How are the data used? Are there thresholds or trigger levels established? If so, what are they? What actions are taken if they are exceeded?	<ul style="list-style-type: none"> • While the regulations do not specifically discuss monitoring, the application for open burning of trade wastes requires that the applicant provide the expected composition and amount of air contaminants to be released into the atmosphere. [1] • No monitoring required. [3]
<i>Public Education and Awareness</i>	
16. Has a public education and awareness program been established? What elements and activities are included in the public awareness and outreach of your program? Does the public know where to find more information about the program and file complaints? What was the process that you went through to involve the public in developing your SMP? What is done on an ongoing basis?	<ul style="list-style-type: none"> • No. [3]
<i>Surveillance and Enforcement</i>	
17. What actions can be taken by the central authority to monitor compliance with the smoke management program?	<ul style="list-style-type: none"> • The regulations do not discuss any actions that can be taken by the AQD to monitor compliance with the smoke management program. [1]

Smoke Management Program Component	State
	Wyoming
18. What penalties are authorized for non-compliance?	<ul style="list-style-type: none"> • The regulations do not discuss penalties for non-compliance. [1]
19. Are post-burn reports required? What information is required?	<ul style="list-style-type: none"> • The burn permits request that a burn completion report be submitted to the AQD. The AQD requests at a minimum: 1) agency name and burn name (as listed on permit), 2) location of burning operations, 3) date burned, and 4) percent burned. [3]
<i>Program Evaluation</i>	
20. Does the program include provisions to periodically review its effectiveness?	<ul style="list-style-type: none"> • No. [3]
21. What are the review criteria?	<ul style="list-style-type: none"> • Not applicable (see question 20). [3]
<i>Optional Air Quality Protection</i>	
22. Does the program establish any “special protection zones”? How are these zones described? What additional smoke management requirements apply in special protection zones?	<ul style="list-style-type: none"> • The regulations do not specifically discuss any special protection zones; however, the open burning of plant and forestry wastes must show that no public nuisance will occur. [1] • AQD burn permits typically contain the following conditions for the applicant to consider burning the prescribed burn: 1) impacts to the air quality related values such as visibility must be considered in nearby Class I areas during prescribed burning activities, with additional consideration given to the time of year related to Class I visitor usage, and 2) although there are no special considerations directly applicable to nearby communities and towns, ambient standards must be maintained and burning can only be permitted if no public nuisance will occur. [3]
23. Does the program establish any “performance standards”? What are the performance standards? How is performance evaluated?	<ul style="list-style-type: none"> • No. [3]
24. What additional smoke management requirements apply if the performance standards have been exceeded?	<ul style="list-style-type: none"> • Not applicable (see question 23). [3]

Smoke Management Program Component	State
	Wyoming
25. Do State and/or local nuisance regulations apply to smoke from prescribed fires? Do these regulations also apply to prescribed natural fires? What criteria are used to establish a nuisance (e.g., number of complaints, particulate matter concentration, etc.)?	<ul style="list-style-type: none"> • The regulation states that the open burning of plant and forestry wastes must show that no public nuisance will occur. [3] • Burn permits typically contain a condition which states "...burning can only be permitted if no public nuisance will occur." [3] • No criteria have been established to define a nuisance. [3]
26. Is the smoke management program, or the regulations authorizing the program, part of the State's implementation plan (SIP)?	<ul style="list-style-type: none"> • The Open Burning Regulation is part of the SIP. [3]
27. How does the State and/or local districts fund operation of the smoke management program (e.g., program budget, permit fees, registration fees, etc.)? What is the basis for any fees assessed (e.g., acres planned, actual acres burned, type of burn, burn objective, etc.)?	<ul style="list-style-type: none"> • Processing of burn permit requests is funded via a program budget. No fees are assessed to burners. [3]
28. Does the State and/or local districts maintain daily, seasonal, or annual air pollutant emissions inventory from prescribed fires? If so, are the emissions calculations based on post-burn reports (i.e., actual acres burned, fuel types, estimated fuel consumed, etc.)?	<ul style="list-style-type: none"> • The division tracks 1) agency name and burn site name, 2) date permit request submitted, 3) date permit issued, 4) number of acres (or piles) to be burned, 5) location, 6) fuel type, 7) burn schedule, 8) particulate emissions, and 9) contact name and phone. All of this information is based on the application as submitted to the Division. [3]
29. When actions are taken to minimize emissions (e.g., fuel thinning, rapid mop-up, alternative to fire, etc.), is a mechanism in place to calculate and record the air pollutant emission reductions achieved?	<ul style="list-style-type: none"> • No. [3]

Smoke Management Program Component	State
	Wyoming
30. Are you planning to certify your SMP to the EPA? If so, what is your time line?	<ul style="list-style-type: none"> • Wyoming has not yet developed a Smoke Management Program and does not intend to certify Chapter 10, Section 2 to the EPA as a certified Smoke Management Program. [4]

Note: Chapter 10, Section 2 was previously Wyoming Air Quality Standards and Regulations Section 13 Open burning restrictions. The entire set of Wyoming Air Quality Regulations were restructured from one chapter into thirteen chapters as of October 29, 1999. The Division did not make any changes or additions in the content of the existing regulations beyond basic introductions and cosmetic changes to newly organized chapters.